Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

A99.9
F764U

USDA
NAT'L AGRIC LIBRARY
2003 AUG 21 P 2:13
CURRENT SERIAL

SKIING TRENDS and OPPORTUNITIES in the WESTERN STATES

ECONOMIC DEVELOPMENT ADMINISTRATION
TECHNICAL ASSISTANCE PROJECT
U.S. DEPARTMENT OF COMMERCE

INTERMOUNTAIN FOREST
AND RANGE EXPERIMENT STATION
OGDEN, UTAH

HIGHLIGHTS

- 415,000 skiers made 4.3 million visits to western ski areas in the 1963-64 season--an average of 10.27 days of skiing per skier.

- About 95 percent of the skiers were residents of Western States; 37 percent lived in California and 17 percent in Washington.

- Only a little more than 1 percent of the total Western States' population skied in the 1963-64 season.

- A large proportion were novices; nearly one-third had been skiing for only one or two seasons, 20 percent for the first year.

- Two-thirds of skiers were 30 or younger.

- Male skiers outnumbered females 2 to 1, but among skiers aged 13-22, proportions were about equal.

- Skiers spent $115 million in the 1963-64 season--$88.4 million on ski trips and $26.7 million on equipment and clothing at home.

- Average daily expenditure on trips was $20.54 per skier. Daily cost varied with kind of trip--$11 for single day, $25 for weekend, and $52 for vacation trips.

- Median annual family income of skiers was $9,500--$2,000 higher than that of the western population at large.

- Of the 197 ski areas operating during the 1963-64 season, 36--or 18 percent--had 62 percent of the total cable lift and tow capacity and handled 59 percent of the visits.

- 74 of the 197 ski areas were located in two States--California and Colorado, but had nearly one-half of the total lift and tow capacity.

- Only 82 percent of total cable and rope capacity was used on weekends and holidays when 70 percent of the visits were made, while 21 percent of this capacity was being used on weekdays.

SKIING
TRENDS AND OPPORTUNITIES IN THE WESTERN STATES

Roscoe B. Herrington
Recreation Resource Analyst
Intermountain Forest and Range Experiment Station, Ogden, Utah
Forest Service
U.S. DEPARTMENT OF AGRICULTURE

in cooperation with

Economic Development Administration
U.S. DEPARTMENT OF COMMERCE

This technical assistance study was accomplished by professional consultants under contract with the Economic Development Administration. The statements, findings, conclusions, recommendations, and other data in this report are solely those of the contractor and do not necessarily reflect the views of the Economic Development Administration.

1967

U.S. Forest Service Research Paper INT-34

Santa Fe Ski Basin, Santa Fe
Sierra Blanca Ski Resort, Ruidoso
Sipapu, Taos
Taos Ski Valley, Taos

OREGON

Anthony Lakes, Baker
Arbuckel Mountain, Lexington
Cooper Spur, Hood River
Dixie Mountain, John Day
Hoodoo Ski Bowl, Eugene
Mt. Ashland, Ashland
Mt. Bachelor, Bend
Multorpor, Government Camp
Red Devil, Government Camp
Ski Bowl, Government Camp
Spout Springs, Weston
Summit, Government Camp
Taft Mountain, Roseburg
Timberline, Government Camp
Tomahawk, Klamath Falls
Warner Canyon, Lakeview
Willamette, Oakridge

UTAH

Alta, Salt Lake City
Beaver Mountain, Logan
Blue Mountain, Monticello
Brian Head, Cedar City
Brighton, Salt Lake City
Cedar Canyon, Cedar City
Gooseberry, Salina
Grizzly Ridge, Vernal
Little Mountain, Salt Lake City
Snow Basin, Ogden
Snow Park, Park City
Solitude, Salt Lake City
Timp Haven, Provo
Treasure Mountain, Park City

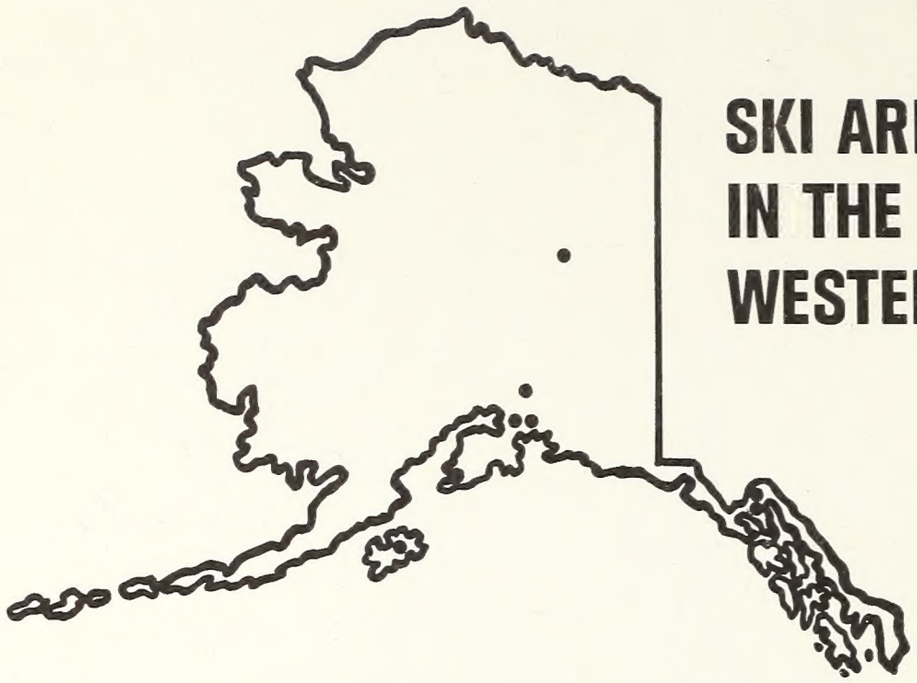
WASHINGTON

Chewelah Peak, Spokane
Crystal Mountain, Enumclaw
Entiat Valley, Entiat
Hurricane Ridge, Port Angeles
Hyak Ski Area, Seattle
Leavenworth, Leavenworth
Loup Loup Ski Bowl, Okanogan
Mt. Baker, Glacier
Mt. Spokane, Spokane
Mt. St. Helens, Longview
Paradise, Tacoma
Pilchuck, Everett
Satus Pass, Goldendale
Sitzmark, Tonasket
Ski Acres, Seattle
Snoqualmie Summit, Seattle
Squilchuck, Wenatchee
Stevens Pass, Seattle
White Pass, Yakima

WYOMING

Antelope Butte, Sheridan
Eagle Rock, Evanston
Fortification Mountain, Pinedale
Hagadon Basin, Casper
Happy Jack, Laramie
Meadowlark, Worland
Medicine Bow, Centennial
Sinks Canyon, Lander
Sleeping Giant, Cody
Snow King Mountain, Jackson
Snowy Range, Saratoga

SKI AREAS IN THE WESTERN STATES



SKIING
TRENDS AND OPPORTUNITIES IN THE WESTERN STATES

Roscoe B. Herrington
Recreation Resource Analyst
Intermountain Forest and Range Experiment Station, Ogden, Utah
Forest Service
U.S. DEPARTMENT OF AGRICULTURE

in cooperation with

Economic Development Administration
U.S. DEPARTMENT OF COMMERCE

This technical assistance study was accomplished by professional consultants under contract with the Economic Development Administration. The statements, findings, conclusions, recommendations, and other data in this report are solely those of the contractor and do not necessarily reflect the views of the Economic Development Administration.

1967

U.S. Forest Service Research Paper INT-34

SKI AREAS IN THE WESTERN STATES

ALASKA
- Alyeska, Anchorage
- Arctic Valley, Anchorage
- Cleary Summit, Fairbanks
- Douglas Ski Bowl, Juneau
- Independence Mine, Palmer
- Kah-Wah-Ee Ski Co., Juneau
- Kodiak Ski Chalet, Kodiak

ARIZONA
- Arizona Snow Bowl, Flagstaff
- Mt. Lemmon, Tucson
- Williams Ski Area, Williams

CALIFORNIA
- Alpine Meadows, Tahoe City
- Badger Pass, Fresno
- Blue Ridge, Wrightwood
- Cedar Pass, Alturas
- China Peak, Fresno
- Coppervale, Susanville
- Dodge River, Sonora
- Donner Ski Ranch, Norden
- Echo Summit, State-Line
- Granlibakken, Tahoe City
- Green Valley Snow Bowl, Temple City
- Heavenly Valley, State-Line
- Holiday Hill, Wrightwood
- Homewood, Tahoe City
- Horse Mountain, Eureka
- June Mountain, Bishop
- Kratka Ridge, La Canada
- Lassen Park, Mineral
- Mammoth Mountain, Mammoth Lake
- Moonridge, Big Bear Lake
- Mount Abel, Maricopa
- Mount Baldy, Mt. Baldy
- Mount Shasta Ski Bowl, Redding
- Mount Waterman, La Canada
- Movie Slope, Mt. Baldy
- Onion Valley, Independence
- Peddler Hill, Jackson
- Pla-Vada Hills, Soda Springs
- Plumas Eureka Ski Bowl, Quincy
- Polsen's Papoose Lodge, Tahoe City
- Powder Bowl, Mt. View
- Rebel Ridge, Big Bear Lake
- Shirley Meadows, Bakersfield
- Sierra Ski Ranch, Placerville
- Snow Forest, Big Bear Lake
- Snow Summit Ski Corp., Big Bear Lake
- Snow Valley, Running Springs
- Soda Springs, Truckee
- Squaw Valley State Recreation Area, Truckee
- Stover Mountain, Chester
- Sugar Bowl, Truckee
- Sugar Loaf Ski Area, Posey
- Table Mountain, Wrightwood
- Tahoe Ski Bowl, Tahoe City
- Wolverton, Sequoia National Park
- Yuba Ski Land, Fairfax

COLORADO
- Arapahoe Basin, Inc., Englewood
- Aspen Highlands, Aspen
- Aspen Mountains, Aspen
- Berthoud Pass, Idaho Springs
- Breckenridge, Denver
- Butter Milk Mountain, Aspen
- Cooper Hill, Leadville
- Crested Butte, Gunnison
- Dallas Divide, Montrose
- Durango, Durango
- Geneva Basin, Grant
- Hesperns Ski Center, Durango
- Hidden Valley, Estes
- Lake Eldora, Boulder
- Loveland Basin, Georgetown
- Mesa Creek, Mesa
- Monarch Winter Sports, Inc., Salida
- Pikes Peak, Colorado Springs
- Redstone, Glenwood Springs
- Ski Broadmoor, Colorado Springs
- Ski Idlewild, Winter Park
- Squaw Pass, Denver
- Steamboat Ski Area, Steamboat Springs
- Steamboat Springs, Steamboat Springs
- Stoner, Dolores
- Vail, Vail
- Winter Park, Winter Park
- Wolf Creek, South Lake

IDAHO
- Bald Mountain, Twin Falls
- Bear Gulch Ski Area, Ashton
- Blizzard Mountain, Arco
- Bogus Basin, Boise
- Brundage Mountain, McCall
- Caribou, Pocatello
- Kelly Canyon Ski Hill, Inc., Ririe
- Kinderhorn, Ketchum
- Lookout Pass, Wallace
- Magic Mountain, Twin Falls
- North-South, Emida
- Payette Lakes, McCall
- Pine Basin, Swan Valley
- Pomerelle, Burley
- Skyline, Pocatello
- Schweitzer Ski Basin, Sandpoint
- Snowhaven, Grangerville
- Soda Springs, Soda Springs
- Soldier Mountain, Fairfield
- Taylor Mountain, Idaho Falls

MONTANA
- Bear Paw, Havre
- Beef Trail, Butte
- Belmont Ski Club, Helena
- Big Mountain, Whitefish
- Bridger Bowl, Bozeman
- Corona Lake, Plains
- Deep Creek, Wise River
- Grass Mountain, Townsend
- Jack Creek, Ennis
- Kendall, Lewiston
- King's Hill, Great Falls
- Lost Trail, Wisdom
- Marshall Bowl, Missoula
- Missoula Snow Bowl, Missoula
- Rainy Mountain, Dillon
- Red Lodge Grizzly Peak, Red Lodge
- Termaat's, Kalispell
- Turner Mountain, Libby
- Wraith Hill, Anaconda
- Z-T, Butte

NEVADA
- Lee Canyon Ski Area, Las Vegas
- Mt. Rose Ski Bowl, Reno
- Reno Ski Bowl, Reno
- White Pine Ski Club, Humboldt Nat. Forest

NEW MEXICO
- Cloudcroft, Cloudcroft
- Pajarito Mountain, Los Alamos
- Red River, Red River
- Sandia Peak, Albuquerque
- Santa Fe Ski Basin, Santa Fe
- Sierra Blanca Ski Resort, Ruidoso
- Sipapu, Taos
- Taos Ski Valley, Taos

OREGON
- Anthony Lakes, Baker
- Arbuckel Mountain, Lexington
- Cooper Spur, Hood River
- Dixie Mountain, John Day
- Hoodoo Ski Bowl, Eugene
- Mt. Ashland, Ashland
- Mt. Bachelor, Bend
- Multorpor, Government Camp
- Red Devil, Government Camp
- Ski Bowl, Government Camp
- Spout Springs, Weston
- Summit, Government Camp
- Taft Mountain, Roseburg
- Timberline, Government Camp
- Tomahawk, Klamath Falls
- Warner Canyon, Lakeview
- Willamette, Oakridge

UTAH
- Alta, Salt Lake City
- Beaver Mountain, Logan
- Blue Mountain, Monticello
- Brian Head, Cedar City
- Brighton, Salt Lake City
- Cedar Canyon, Cedar City
- Gooseberry, Salina
- Grizzly Ridge, Vernal
- Little Mountain, Salt Lake City
- Snow Basin, Ogden
- Snow Park, Park City
- Solitude, Salt Lake City
- Timp Haven, Provo
- Treasure Mountain, Park City

WASHINGTON
- Chewelah Peak, Spokane
- Crystal Mountain, Enumclaw
- Entiat Valley, Entiat
- Hurricane Ridge, Port Angeles
- Hyak Ski Area, Seattle
- Leavenworth, Leavenworth
- Loup Loup Ski Bowl, Okanogan
- Mt. Baker, Glacier
- Mt. Spokane, Spokane
- Mt. St. Helens, Longview
- Paradise, Tacoma
- Pilchuck, Everett
- Satus Pass, Goldendale
- Sitzmark, Tonasket
- Ski Acres, Seattle
- Snoqualmie Summit, Seattle
- Squilchuck, Wenatchee
- Stevens Pass, Seattle
- White Pass, Yakima

WYOMING
- Antelope Butte, Sheridan
- Eagle Rock, Evanston
- Fortification Mountain, Pinedale
- Hagadon Basin, Casper
- Happy Jack, Laramie
- Meadowlark, Worland
- Medicine Bow, Centennial
- Sinks Canyon, Lander
- Sleeping Giant, Cody
- Snow King Mountain, Jackson
- Snowy Range, Saratoga

FOREWORD

This report is concerned with describing the ski industry and skiers in the Western States.[1] It traces the growth pattern of skier attendance at ski areas in the West since 1955, estimates the probable attendance for 1976, and presents an analysis of factors that affect present and could influence future attendance.

A survey was made at all western ski areas that operated during the 1964-65 season. It was conducted by the Intermountain Forest and Range Experiment Station at the request of the Economic Development Administration. All ski area operators and a sample of nearly 6,000 skiers were questioned. This represents the most comprehensive study of western skiing made to date.

Virtually all of the operators took the time necessary to complete rather lengthy questionnaires. Over 80 percent of the skiers who were contacted completed and returned questionnaires.

The value of the combined contributions in time and money by the western Regions of the U.S. Forest Service is roughly equivalent to the funds provided by the Economic Development Administration for this study. These six Regions have a vital interest in this study because nearly 80 percent of the ski areas in the West are on National Forest land.

No attempt was made to explore the financial profitability of successful ski area operation. However, such investigation would be valuable.

---

[1] Includes Arizona, Alaska, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming.

CONTENTS

Page

FOREWORD ii
THE WESTERN SKI INDUSTRY AND SKIER TODAY 1
THE FUTURE OF SKIING IN THE WEST 11

12.1 million visits anticipated in 1976 11
Physical demands of skiing discourage many 12
Cost of skiing deters many people 13
Travel time is a problem 15
Many skiers do not participate every year 16
Participation can be increased: better lifts, tows, and slopes one approach . . 17
Safer skiing is needed 18
Areas needed closer to markets 19
Overnight accommodations facilitate skiing for many 20
Lift and tow capacity probably will not need to increase as rapidly as attendance 23
Sites for new ski areas are plentiful 24
Skiing is an important economic consideration in many communities 26
Promotion efforts will need to be intensified 27
Greater public motivation--the key to expansion 28

APPENDIX 29

Western States Ski Area Operator Questionnaire 30
How survey of ski area operators was conducted 38
Procedure for determining capacity of lifts and tows 38
Procedure for collecting attendance data 40
Estimating lift and tow utilization 45
Relating past attendance to the future 47
How the survey of skiers was conducted 48
Skier Questionnaire 49
Adjustment for sampling bias 53
How the skier population estimate was derived 55
Reliability of skier data 56
How inventory of potential new sites was conducted 60

TABLES

1 Percent of skier expenditure by item and by type of trip 14
2 Average (mean) number of days skied per skier and the standard error of that average (mean) during the 1963-64 season, by State and residency class 58
3 Average (mean) daily expenditure per skier and the standard error of that average (mean) during the 1963-64 season by State and residency class . 58
4 Confidence limits for percentages of the entire skier population estimated to have certain characteristics during the 1964-65 season 59
5 Confidence limits for percentages of the skier population 19 years and older estimated to have certain characteristics during the 1964-65 season . 59

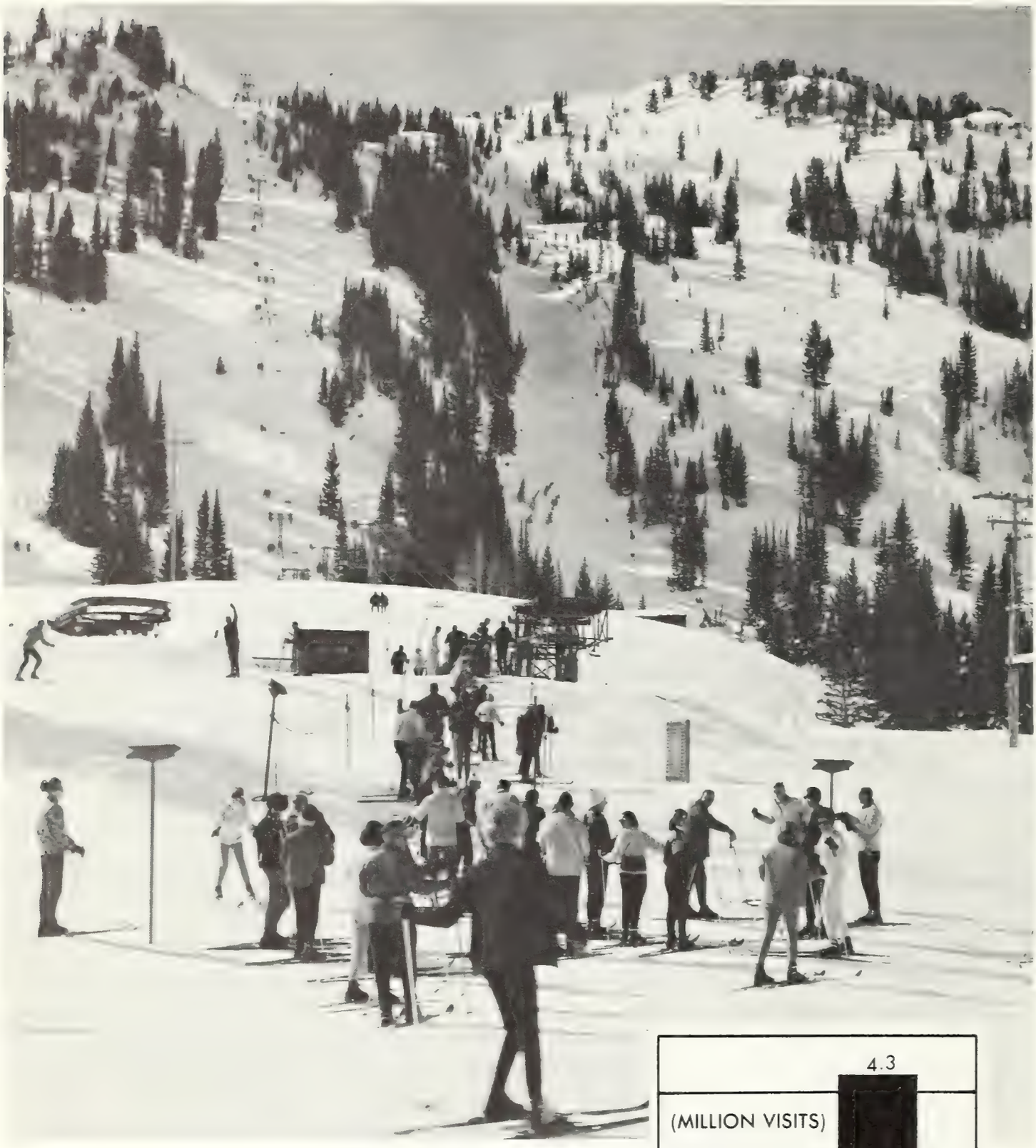
TABLES (con.)

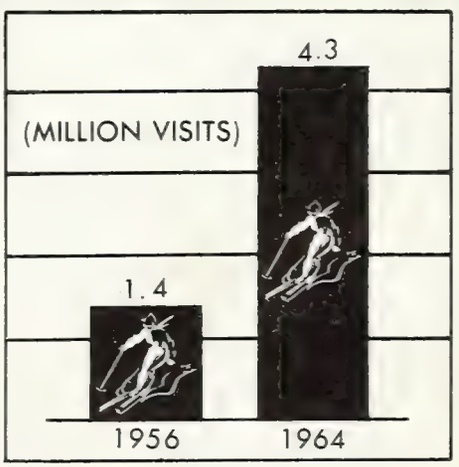
		Page
6	Number of visits to western ski areas, by State and ski season, 1955-64	62
7	Number of skier visits during 1963-64 season by size class of ski area and by State	62
8	Total capacity of both cable and rope tow areas in the Western States, by State, and by ski season, 1955-65	63
9	Cable capacity of western ski areas, by State and ski season, 1955-65	63
10	Number of ski areas in the 12 Western States equipped with both rope and cable tows and those with rope tows only, 1955-64	64
11	Number and total cable capacity of cable areas operating in the Western States during the 1963-64 season by size class and by State	64
12	Proportion of western ski areas that provided night skiing during the 1963-64 season	65
13	Percentage increase and average annual compound rate of increase in skier attendance by States, 1955-64	65
14	Projected number of visits to western ski areas in 1976, based upon past attendance and past and projected changes in population, per capita disposable income, and leisure time	66
15	Capacity of additional lifts and tows planned for construction in the Western States during the years 1966 through 1970	66
16	Comparison between actual visits and maximum potential visits to western ski areas for 1963-64 season during weekend-holiday period and other weekday period of use	67
17	Employment and wages by size class of western ski area, 1963-64	68
18	Number and theoretical capacity of undeveloped sites that have been identified as potential ski areas by State, 1965	68
19	Factors tending to inhibit growth in attendance by size class of ski area	69
20	Profile of western ski areas by capacity size classes showing average values of selected characteristics, 1964-65	70
21	Percent of total visits made to ski areas in each Western State during the 1963-64 season by residency class of skiers	71
22	Distribution of skier visits by age class and State of residence, 1964-65 season	71
23	Distribution of resident skiers of 12 Western States who visited ski areas in these States during the 1964-65 season, according to distance traveled by auto and type of trip	72
24	Distribution of nonwestern skiers who visited western ski areas during the 1964-65 season, according to distance traveled by auto and type of trip	72
25	Average distance of auto travel by residents of 12 Western States, who skied in western ski areas during the 1964-65 season	73
26	Average daily expenditures for specified items by skiers visiting western ski areas during the 1964-65 season according to type of trip	73
27	Itemized expenditures on ski trips during 1963-64 season in western ski areas by State in which expenditure was made	74

TABLES (con.) Page

28 Average daily expenditure of skiers on single-day trips to western ski areas during the 1964-65 season by State and residency class 74
29 Average daily expenditures of skiers on weekend trips to western ski areas during the 1964-65 season by State and residency class 75
30 Average daily expenditures of skiers on vacation trips to western ski areas during the 1964-65 season by State and residency class 75
31 Average daily expenditures of skiers who visited western ski areas during the 1964-65 season by State and residency class 76
32 Total trip expenditures of skiers who visited western ski areas during the 1963-64 season by family income class and by type of trip 76
33 Annual expenditures on clothes and equipment by skiers who are residents of the 12 Western States, 1963-64 season 77
34 Number of skiers, by State, who visited western ski areas during the 1963-64 season, grouped into three residency classes 77
35 Proportion of total population that skied during the 1963-64 season for each of the 12 Western States 78
36 Educational background of skiers who visited western ski areas during the 1964-65 season, by State of residence 78
37 Age classification of skiers who visited western ski areas during the 1964-65 season, by State of residence 79
38 Family income class of skiers who visited western ski areas during the 1964-65 season, by State of residence 79
39 Average number of visits to western ski areas per skier during the 1964-65 season, by State and by residency class 80
40 Percent of married skiers, 19 years or older, who visited western ski areas during the 1964-65 season, whose spouse was classed as a "skier"--by family income class and sex 80
41 Distribution within family income classes of those (19 years or older) who skied during the 1964-65 season, according to type of ski trip. 81
42 Average number of days skied during the 1964-65 season per skier on each of three types of trips and for all trips combined, by family income class 81
43 Occupational backgrounds of skiers who visited western ski areas during the 1964-65 season, by State of residence 82
44 Marital status and sex of skiers 19 years or older who visited western areas during the 1964-65 season, by State of residence 82
45 Percent of skiers taking various types of trips or combinations of such trips to western ski areas during the 1964-65 season by State of residence 83
46 Average daily expenditure per skier on trips, by family income class and type of trip, 1964-65 84
47 Percent of skier population that started to ski in each year since 1950 . . 84

LIST OF POSSIBLE SITES 85





SKIER VISITS HAVE TRIPLED SINCE 1956

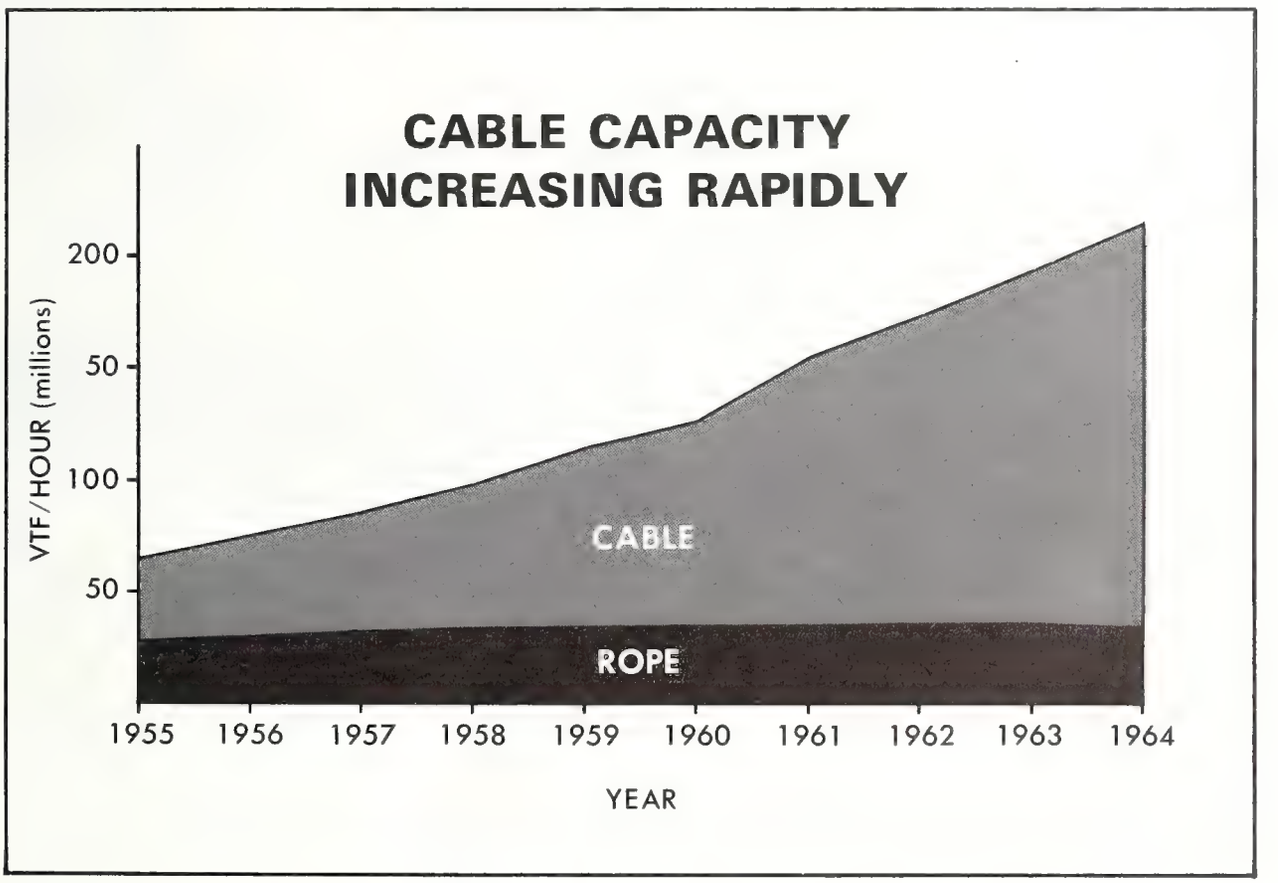
THE WESTERN SKI INDUSTRY AND SKIER TODAY

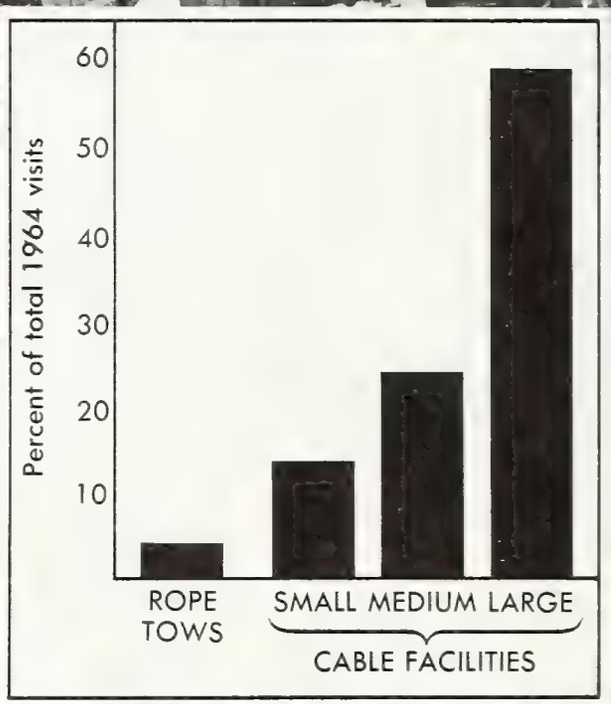
Skiing as a form of recreation got its impetus in the West when the first ski runs were constructed in 1936 at Sun Valley, Idaho. During the 1963-64 ski season, more than 415,000 skiers were coursing the snowclad mountains of the 12 Western States and their expenditures--more than $115 million--made a significant contribution to the economy of the West.

The surge in number of skiers during the 50's developed into a nationwide phenomenon. It captured the attention of those sports enthusiasts who are always seeking new ways to test their physical capabilities. It also challenged the imagination of private entrepreneurs and public land managers--particularly those interested in acquainting more and more people with year-long experiences of the outdoor recreation opportunities.

This is reflected by what occurred during the 9-year period 1955-63. Skier visits[2] tripled--from 1.4 million in 1955 to 4.3 million in 1963. And the number of

[2] In this report, a visit was considered as one person visiting a ski area to ski all or part of a day.





LARGE AREAS MOST POPULAR

. . . one of the more dramatic changes has been the increasing quality of lifts.

ski areas catering to this new breed of fun seekers increased from 152 to 197. The lift and tow capacity of these western ski areas kept pace with demand. It also tripled--from 66 million in 1955 to 215 million Vertical Transport Feet per hour (VTF/hr.)[3] in 1964.

In 1964 the average daily capacity per ski area in the West was 682 skiers as compared to an average of 270 in 1955. The 10 largest areas, in fact, had an average capacity of 3,000 per day during the 1964-65 season. These 10, furthermore, accounted for nearly 25 percent of the total lift and tow capacity in the 12 Western States.

The change in character and quality of these lift and tow facilities was apparent. In 1955, more than half of the ski areas in the West only had rope tows. Today, three-fourths of western areas have cable facilities of one kind or another--gondolas, aerial trams, T-bars, J-bars, or platter pulls. As a result, the uphill journey has become much less strenuous.

Large areas are most popular.[4] The 36 largest--which constituted 18 percent of all the ski areas in the West--accounted for nearly 60 percent of the total visits. Medium-sized areas that offered cable service accounted for 23 percent of the visits and small areas with cable service only for 14 percent. The remaining 3 percent of the visits during the 1963-64 season were handled by those areas that offered only rope tow service.

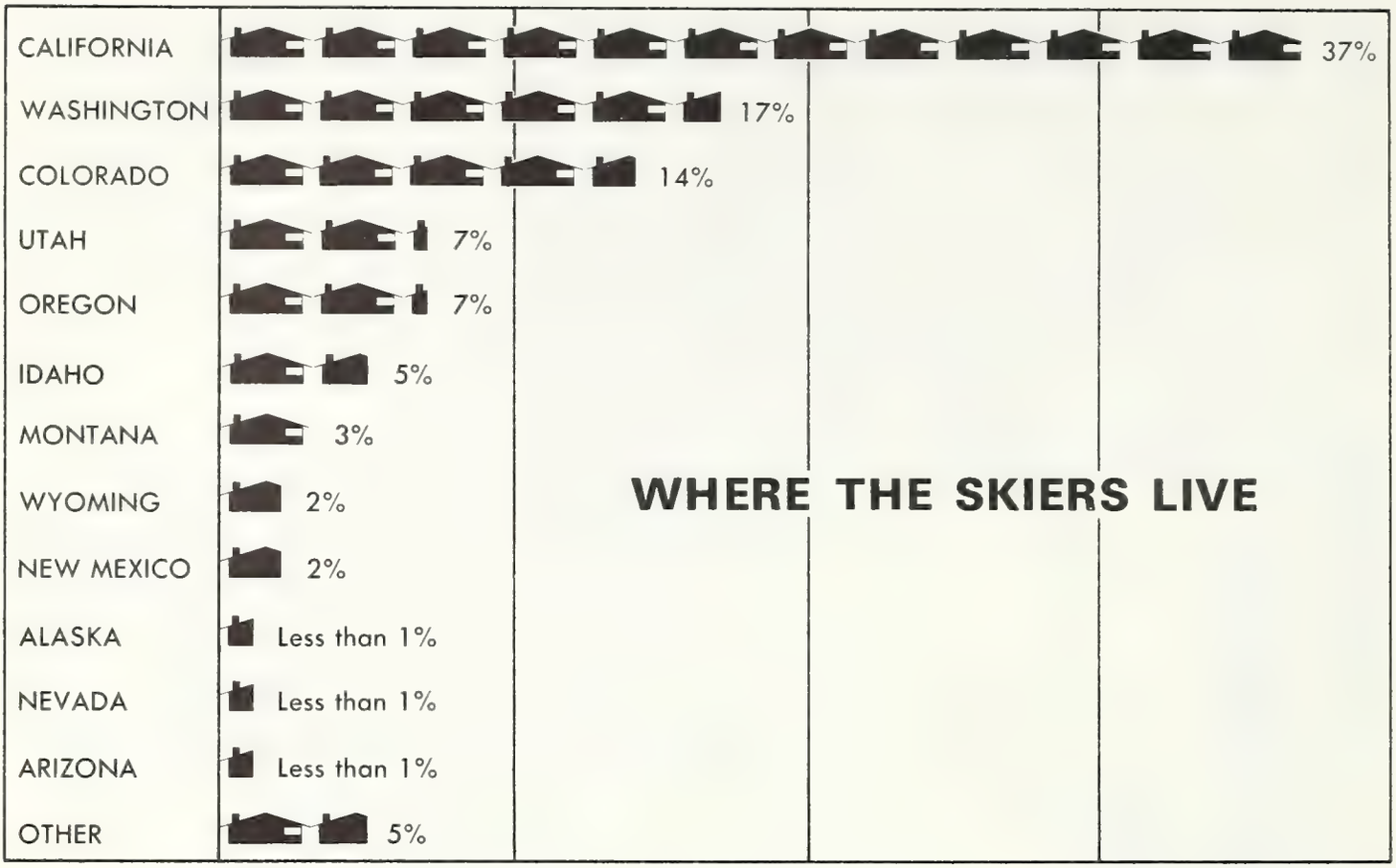
Only a very small fraction of the total population of the 12 Western States are skiers. Of the 415,000 skiers who in the 1963-64 season visited western ski areas, 395,000 were residents of the West. This is slightly more than 1 percent of the total population in the Western States.

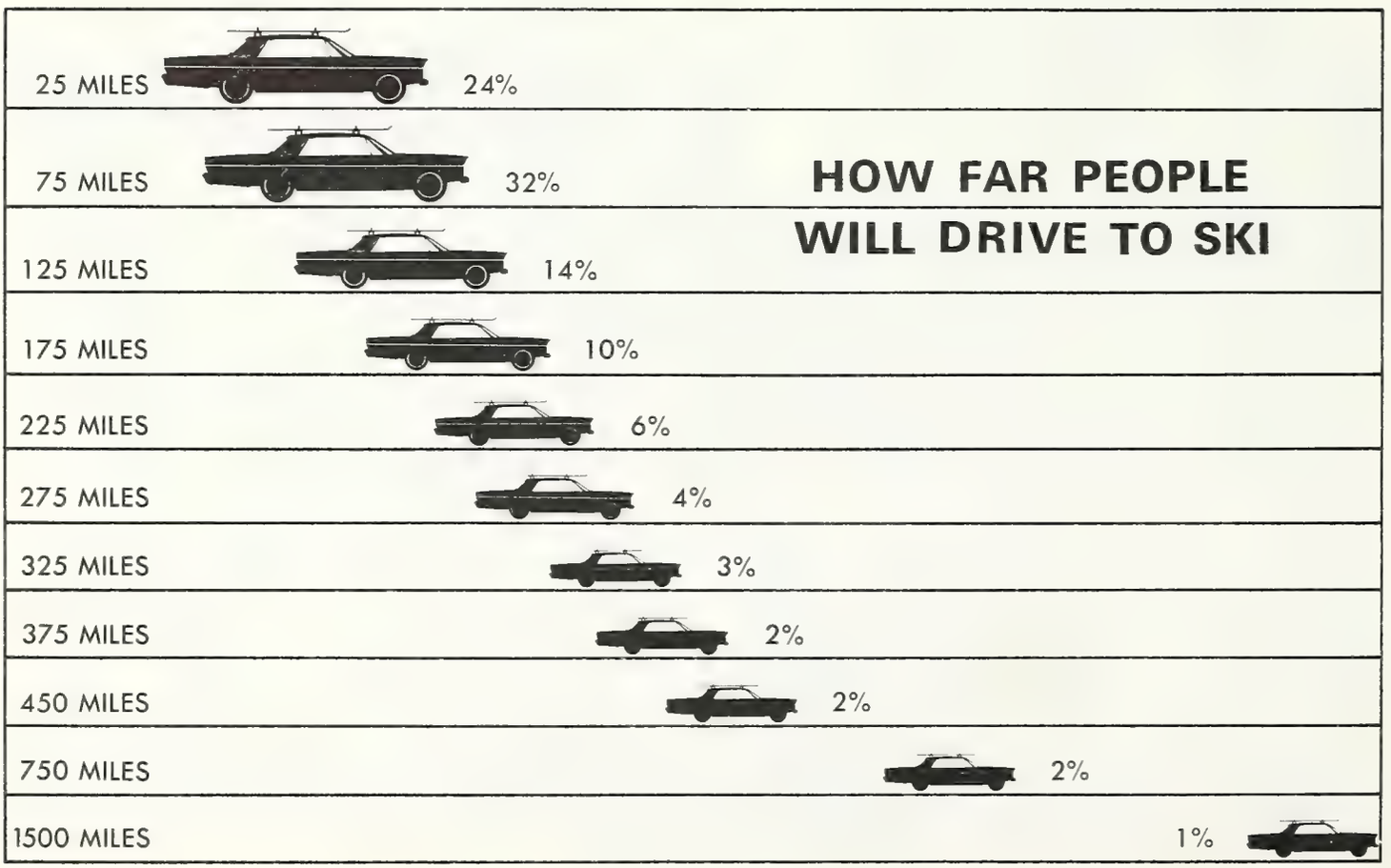
The majority (61 percent) of the western skiers live in the heavily populated Pacific Coast States. California alone accounts for 37 percent of the total number who skied during the 1964-65 season in the 12 Western States (see chart next page).

---

[3] Capacity of lifts and tows has been expressed in Vertical Transport Feet per hour (VTF/hr.) to provide a uniform and comparable measure for all lifts and tows. It was calculated by multiplying the actual number of skiers the lift or tow can carry per hour by the vertical rise of the lift or tow in feet. See page 38.

[4] Areas equipped with cable facilities were grouped in three size classes: those having a capacity of 1,500,000 VTF/hr. or more were classed as large; those having a capacity of 700,000 to 1,500,000 VTF/hr. were classed as medium; and those having less than 700,000 VTF/hr. were classed as small.


CALIFORNIA
37%
WASHINGTON
17%
COLORADO
14%
UTAH
7%
OREGON
7%
IDAHO
5%
MONTANA
3%
WYOMING
2%
NEW MEXICO
2%
ALASKA
Less than 1%
NEVADA
Less than 1%
ARIZONA
Less than 1%
OTHER
5%
WHERE THE SKIERS LIVE


25 MILES
24%
75 MILES
32%
125 MILES
14%
175 MILES
10%
225 MILES
6%
275 MILES
4%
325 MILES
3%
375 MILES
2%
450 MILES
2%
750 MILES
2%
1500 MILES
1%
HOW FAR PEOPLE
WILL DRIVE TO SKI

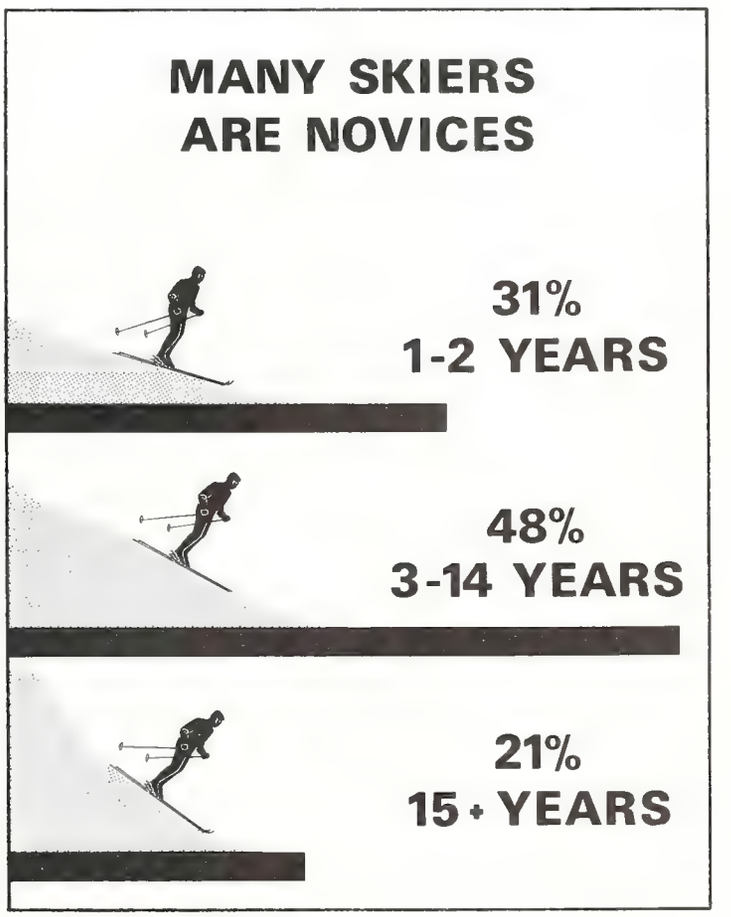
The average skier must travel a long way. Although a few skiers are fortunate enough to live within 25 miles of a ski area, western skiers travel an average of 139 miles one way to reach their ski areas. The average one-way distance increases to 320 miles when skiers take vacation ski trips, that is, trips on which they stay away from home four or more nights. Naturally, the nonwestern skier travels much further--600 miles is the one-way average--when he comes to the Western States for a ski vacation.

The California skier travels nearly twice as far on a ski trip as does the skier from the other Western States. Nor does he stop at the State line. The ubiquitous California skiers comprised 60 percent of all the western nonresident skiers who visited Colorado, Nevada, and Utah during 1965.

Twenty percent of those who visited western ski areas during the 1964-65 season were participating in their first year of skiing. This followed the same pattern found in a similar study made earlier of attendance at ski areas in the eastern United States.[5] Actually 31 percent of those skiing in the Western States during the 1964-65 season could be classed as "novices" inasmuch as they had only been skiing for 1 or 2 years.

Another pattern became evident from the results of this survey of western ski areas; namely, participation isn't on a continuing year-in-year-out basis. On the average, 10 percent of all those who ski one year don't ski the following year.

Regularity of participation declines, furthermore, over the long haul. Among those who reported they had learned to ski 3 to 4 years ago, 96 percent skied every year since. The proportion dropped to 78 percent among those who reported they had learned to ski 5 to 8 years ago and to 61 percent among those who reported they had learned to ski 9 or more years ago.

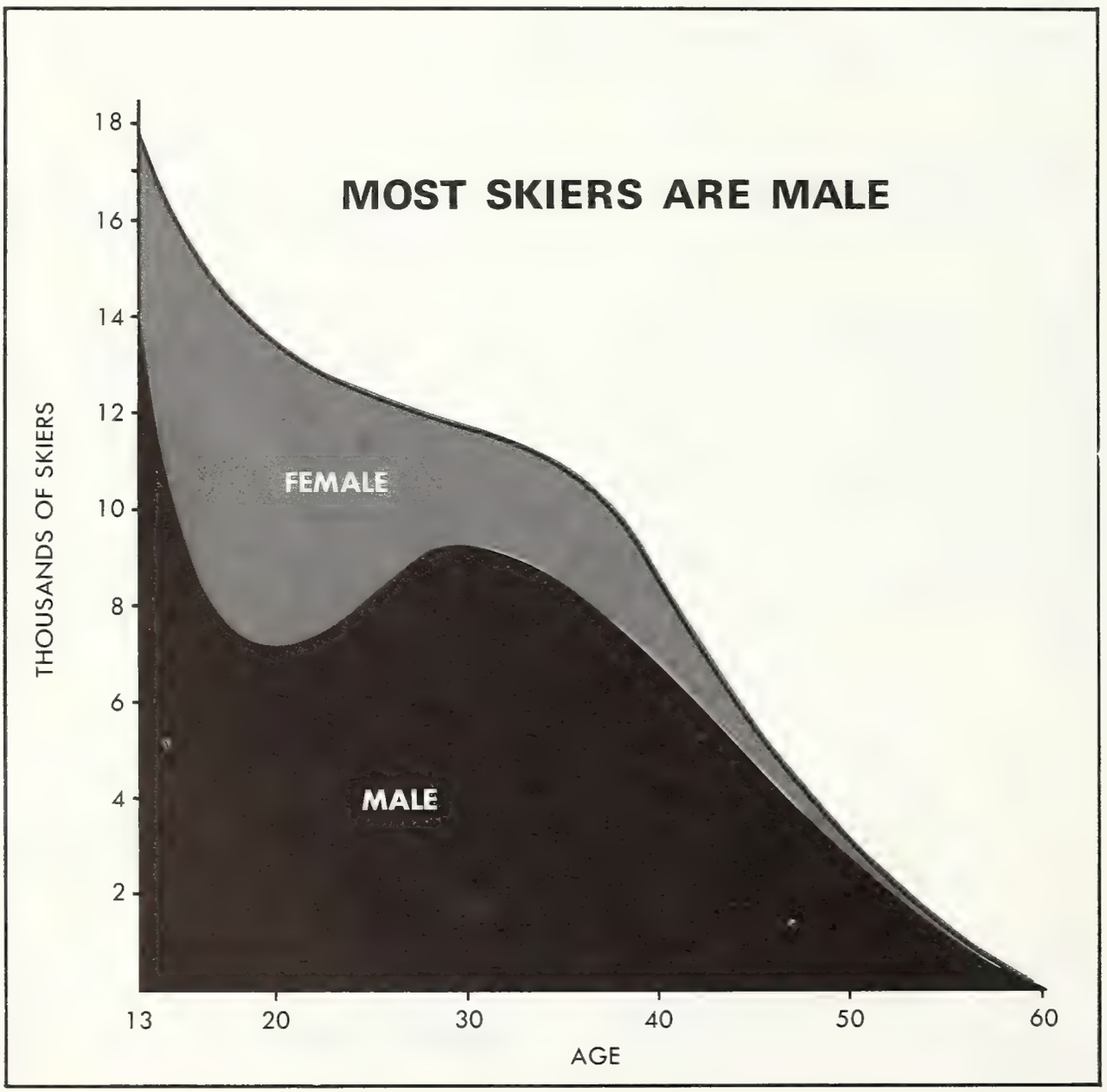


[5] U.S. Dep. of Commerce. The skier market in northeastern United States. Wash. D.C.: Govt. Printing Office. 1965.

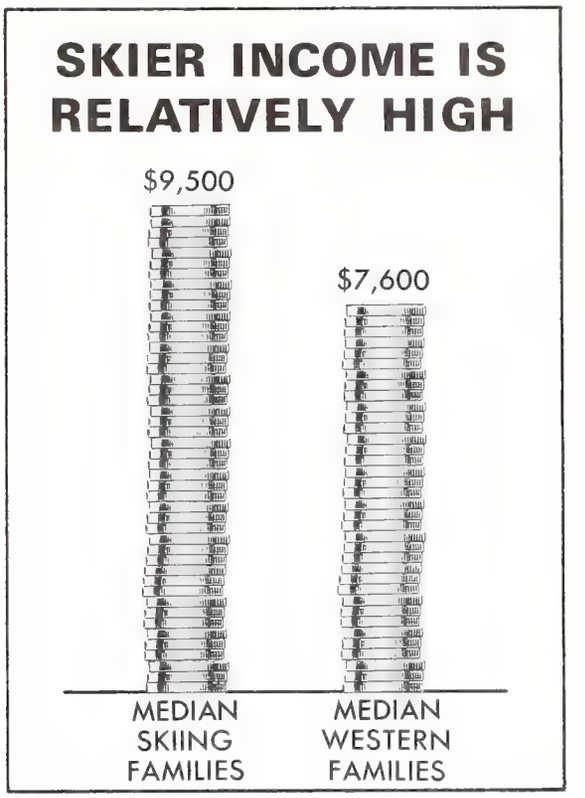
Two-thirds of the skiers visiting western ski areas were in the 30-or-younger age groups.[6] Those older than 40 represented only 7 percent of the skiing population but accounted for 13 percent of the visits made to western ski areas during the 1964-65 season.

During the 1964-65 season, male skiers outnumbered female skiers nearly 2 to 1. This ratio, however, was not constant throughout all age levels. Among skiers of college age and younger, the proportion was nearly equal. In the over-40 age group, males outnumbered the females nearly 5 to 1. Although 70 percent of the married male skiers reported that their wives also skied, less than 50 percent of their wives actually skied during the 1964-65 season.

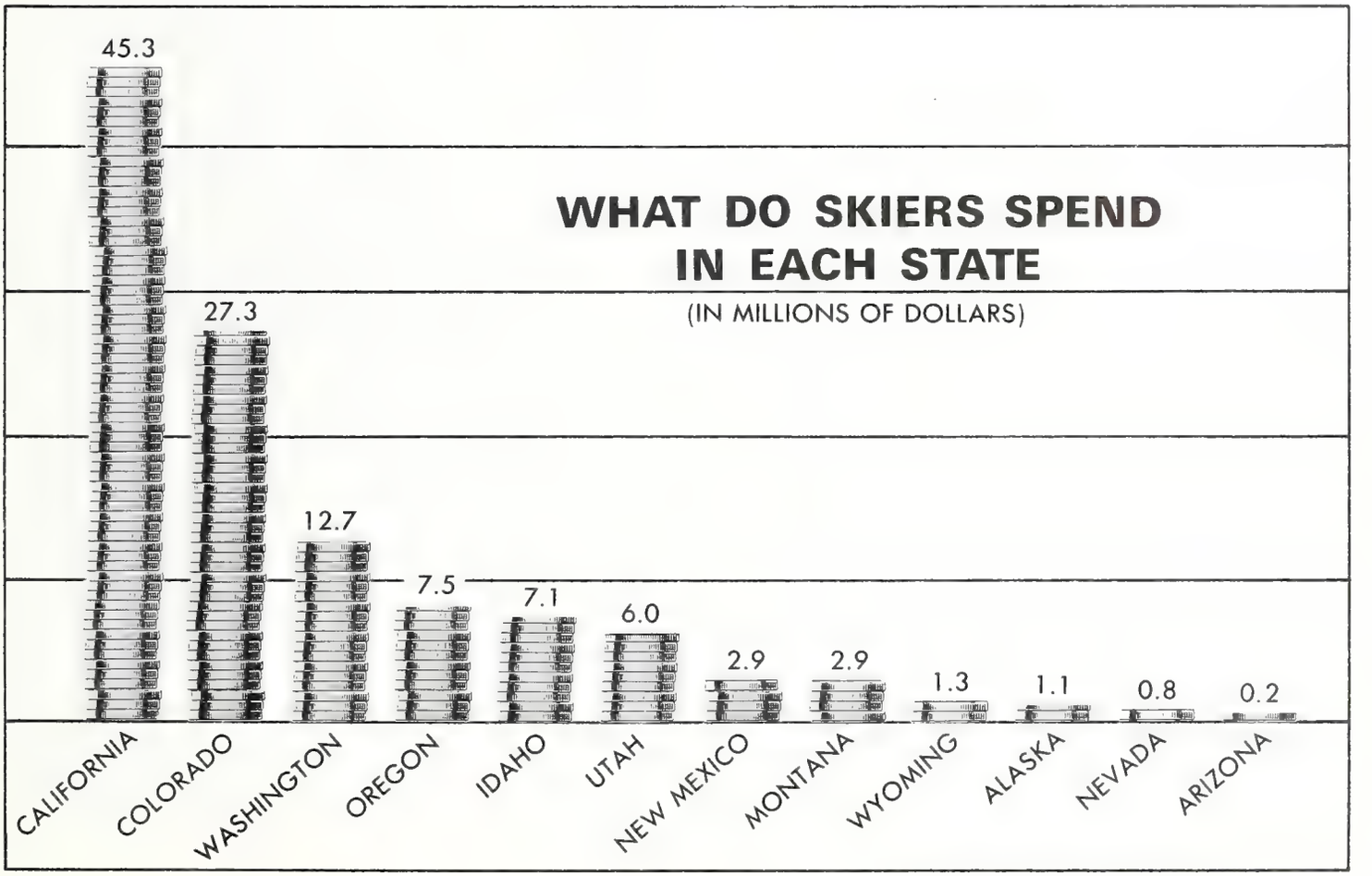
[6]Questionnaires could not be mailed to skiers younger than 13 years old. Thus, age distribution of skiers described in this report is only for those 13 years or older.



The income level of the skiers is higher than that of the population as a whole. The median family income of skiers contacted during the 1964-65 season was nearly $2,000 higher than that for the 12 Western States as a region. Inasmuch as skiers generally have higher incomes, they probably have more discretionary money to spend on recreation such as skiing. However, skiers do not come exclusively from the high income brackets--in fact, 7 percent have incomes of less than $4,000 a year.



In total, skiers spent $88.4 million in 1964. In addition, they spent $26.7 million for equipment and clothing in their hometowns. In short, skiing is big business, benefiting hometown merchants as well as skiing communities. However, the magnitude of skier spending varies widely among Western States. California and Colorado--with the largest number of skier visits--naturally experienced the biggest volume of spending.



Average daily expenditure per skier was $20.54 during 1965. Although it is possible to ski on a more limited budget (and many people do), most skiers appear not to skimp on expenses for their ski trips.

This overall average, however, is somewhat misleading because the daily expenditure per skier differs substantially among kinds of trips taken. The average daily cost of the popular single-day trip, which requires no overnight accommodation, was $11.04 during the 1964-65 season. Many skiers (46 percent) never skied except on a single-day trip basis. As soon as the skier elects to ski on overnight trips, his average daily cost climbs rapidly. Weekend ski trips (one to three nights away from home) cost $24.84 per day per skier--more than twice that for single-day trips. At $52.44 per day, vacation ski trips (four or more nights away from home) cost nearly five times as much as single-day ski trips on the average.

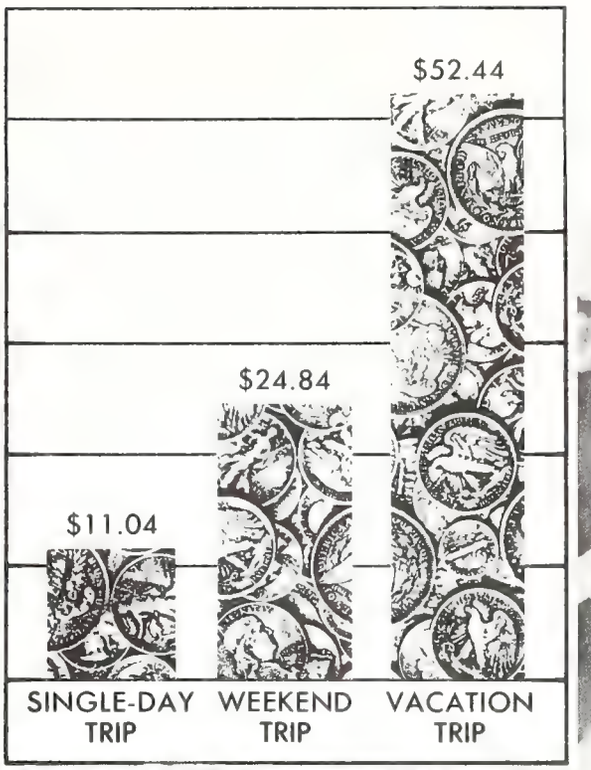
In spite of the increased daily cost incurred, 54 percent of western skiers took at least one overnight ski trip in 1965. In fact, one skier in five reported that he always stayed overnight whenever going on a ski trip.

Overnight trips are a necessity for some if they are to ski at all. The alternative to a 4-or-more hour driving ordeal at the end of a hard day of skiing is an overnight trip for those who live more than 200 miles from a ski area. For others, however, the conviviality of apres skiing is an integral part of the sport and well worth the extra expense.

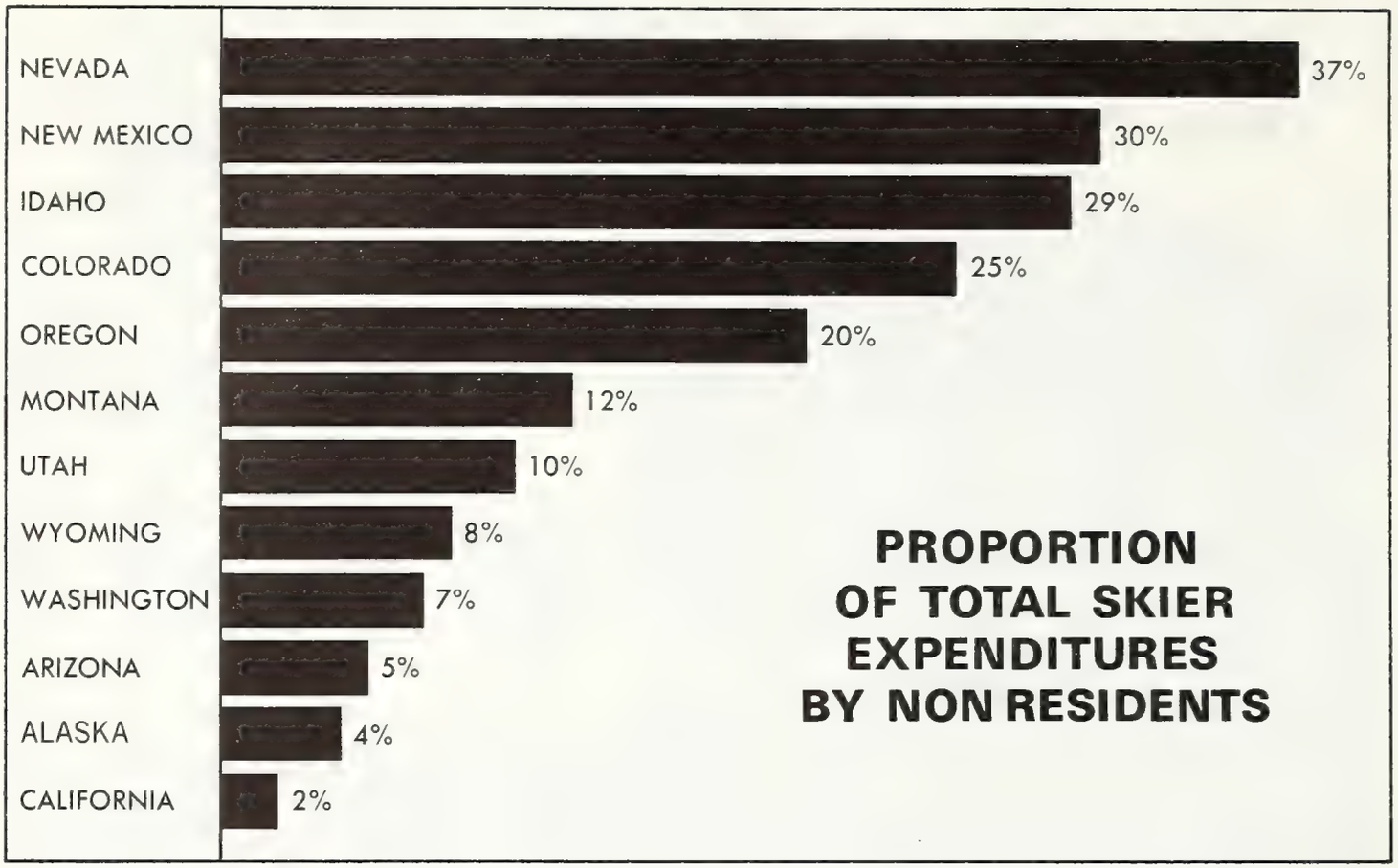
Whatever their motivation, skiers who stay overnight tend to spend more for practically everything on their weekend and vacation trips, including lift tickets, than they do on single-day trips. The big change, of course, is in their expenditures for lodgings and meals. Average daily cost of transportation is also higher because the distance traveled to ski areas is generally greater. And their expenditures for after-skiing activities such as dancing and nightclubbing, which cost only 82 cents a day on single-day trips, run over $6 per day on vacation trips.

Regardless of kinds of trips taken, skiers spend relatively little on skiing instruction or ski rental and repair. Apparently most skiers own their equipment; nearly 80 percent reported purchasing equipment and clothing during 1965, at an average cost of $85.42 per person.

THE AVERAGE SKIER SPENDS PER DAY...



. . . skiing has created a new mode in outdoor wear for both men and women



Willingness of westerners to travel is another characteristic revealed by this study. Nearly 70 percent of the skiers reported visiting two or more areas in 1965; 45 percent visited three or more areas. Ski area operators in five of the 12 Western States derived at least 20 percent of their total business from nonresidents in 1965. In Nevada and New Mexico, the proportion of total income derived from nonresidents is much greater.

A large portion of the out-of-State skiers are from the Midwest and East on vacation in the West. Their expenditures have made a significant addition to the western tourist industry. Although they accounted for only 6 percent of the western skiing, their total expenditure amounted to $12 million.

There is every reason to expect continued growth for the western ski industry in the near future. Statistics describing the change in the western ski industry during the last decade give considerable basis for optimism that the opportunity for development is a long way from being fully exploited. The following section describes some of the important problems associated with the opportunity for future expansion.

THE FUTURE OF SKIING IN THE WEST

Available evidence indicates that western skiing will grow rapidly during the next decade. There is, however, considerable doubt that it can continue to expand at a rate equal to that of the past few years.

Ski area attendance data assembled for this study confirm what many have surmised: participation has grown rapidly since 1955. Except for the winter of 1962-63 when insufficient snow drastically curtailed the length of the season, total ski area attendance has increased every year. Annual attendance has grown at an average annual compound rate of 15.4 percent--from 1.4 million visits in 1956 to 4.3 million visits in 1964. Moreover, the growth rate, which averaged 12.8 percent between 1955 and 1960, accelerated to 19.9 percent after 1960.

Besides sketching a historical profile of the western ski industry, these data yield meaningful clues concerning the dimensions of its future. The use of these data, however, is appropriately limited to projecting the trend for the short-term future because the data are based on a relatively short period.

By assuming that past attendance growth rates will prevail during the years immediately ahead, the following estimates for 1976 may be made: (1) 20.4 million visits based upon the 12.8 percent rate; (2) 45.1 million visits based on the 19.9 percent rate; and (3) 27.5 million visits based on the 15.4 percent rate.

This broad range in estimated future visits--20 to 45 million--emphasizes that a simple extension of past trends involves fundamental hazards. Such extensions of numbers alone do not take into account the underlying factors responsible for past growth. Since 1955 the annual increase in number of visits to western ski areas has been closely related to annual increases in population size, per capita income, and amount of leisure time.[7] Although these three factors don't explain why people ski, their association with increased ski area attendance seems logical; specifically, a greater proportion of an increasing population will have both the money and the time to go skiing if they so choose.

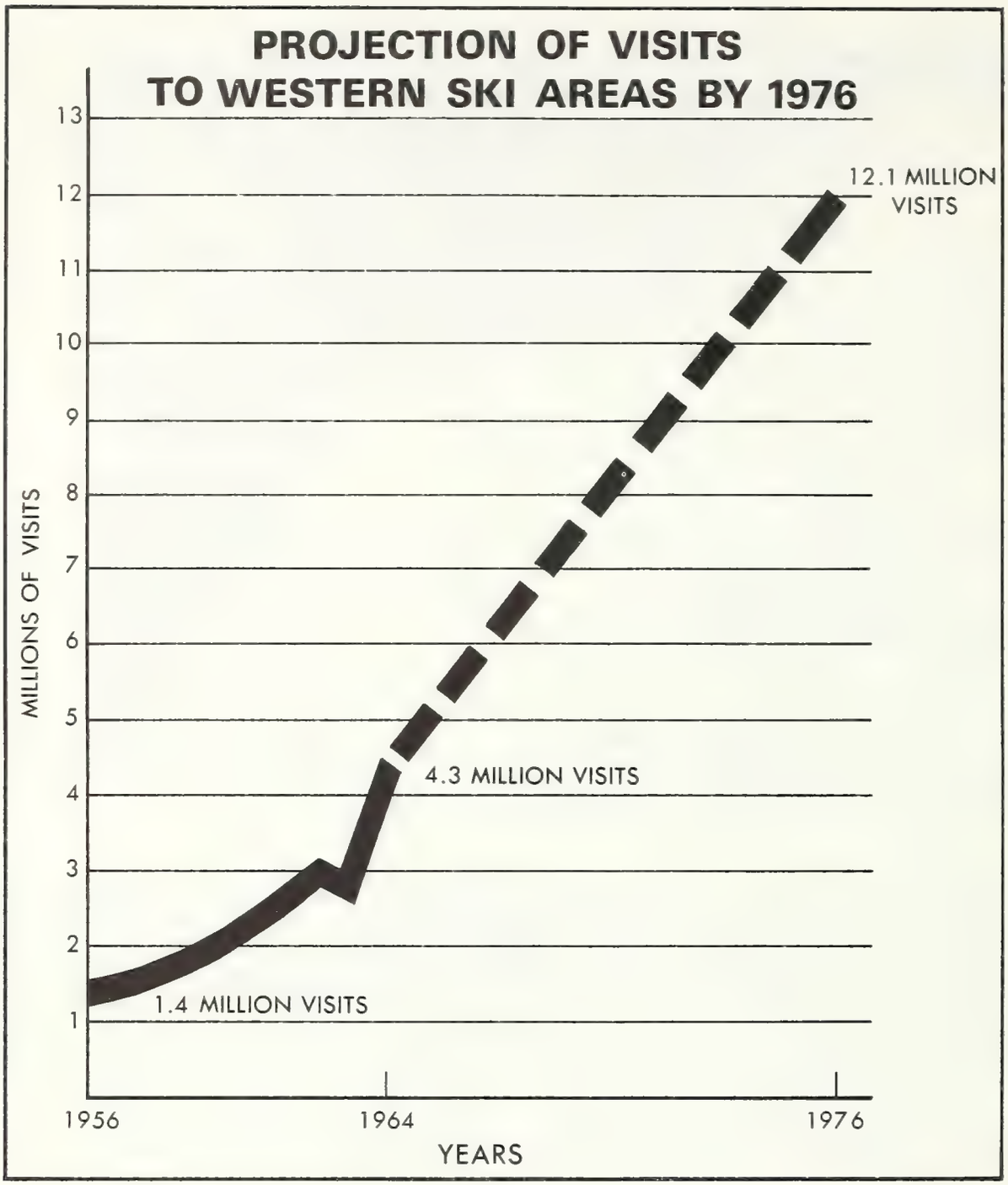
12.1 million visits anticipated in 1976

If it is assumed that these three factors will continue to have about the same relationship with attendance in the future, 12.1 million visits can be anticipated in 1976. This would mean that the 4.3 million visits recorded for 1964 will increase at an average annual rate of 8.3 percent. This rate is lower than those experienced in the past. There already is some evidence that construction of new lifts is slowing down. Ski Magazine has reported that sharp cutbacks in such construction of lift facilities have occurred since 1964.[8]

---

[7] See page 47 for details.

[8] Ski Magazine, November 20, 1966, p. 27.



This is not to preclude the possibility that attendance might increase at a faster rate in the future. The ski industry, however, will need to find ways to overcome or modify a number of factors that tend to limit more widespread and sustained participation. (In 1964, only 2.2 percent of the population of the 12 Western States between ages 13 and 60 skied.) These factors are discussed in the following pages.

Physical demands of skiing discourage many

Skiing is one of the most physically demanding forms of recreation. Learning to ski is especially strenuous. While this is not a deterrent to those in their twenties or younger, especially teenagers, only those of the older persons who are young-in-spirit are even inclined to take up the sport.

This is reflected by the fact that less than one-half of 1 percent of those who skied in the West during 1965 were over 50, while nearly one-third were 19 or younger. A breakdown of the age distribution of those who skied in the West during the 1964-65 season follows:

Age class	Percent of skiers
13-18	29
19-22	8
23-30	30
31-40	26
41-50	7
Over 50	<0.5

Another deterrent is the fear of injury and possible loss of income resulting from such incapacitation. This has prompted many to conclude they can't afford to indulge a yearning to test the slopes.

Cost of skiing deters many people

Skiers spent an average of $20.54 each per day of skiing during the 1964-65 season. In addition to trip expenditures, western skiers each spent an average of $67.65 on equipment and clothing. Total expenditure per skier for the season averaged $278.60.

Average figures are somewhat misleading because they compress the wide differences that do exist. For example, the amount spent per day of skiing depends on the kind of ski trip taken. On a vacation trip (four or more nights away from home), the average daily expenditure per skier is $52.44. On a single-day trip (skier does not stay away from home overnight), the average daily expenditure is $11.04. On weekend trips (one to three nights away from home), the average daily expenditure is $24.84.

Differences in costs incurred for lodging, meals, and transportation account for most of the variations in average daily expenditures among these three types of trips. After-ski activities, such as drinking and dancing, also contribute significantly to the higher daily expenditures on weekend and vacation trips. (See table, next page.)

Spending patterns also differ greatly, depending upon where the skiers live. The average daily expenditures for single-day trips range from $7.51 in Idaho to $15.89 in Alaska. On vacation trips, these range from $23.88 per day for Washington skiers to $63.95 per day for Wyoming skiers.

Expenditures of such magnitude undoubtedly prevent many people with moderate incomes from taking up the sport. This might also be a reason why many people quit skiing within a relatively short time. It is not surprising to find that the median annual family income of skiers is $2,000 greater than that of the public at large. In fact, nearly one out of five skiers reported a family income in excess of $15,000 a year in 1965, as shown in the following tabulation:

Table 1.--Percent of skier expenditure by item and by type of trip

Item	Single day[1/]	Weekend[2/]	Vacation[3/]
Lodging and meals	13.4	33.7	35.7
Lift tickets	35.9	20.5	16.1
Rental or repair	7.4	4.3	2.1
Ski school	4.9	2.0	2.6
After ski activities	7.4	14.0	11.7
Equipment	7.1	4.2	6.7
Transportation	22.5	15.9	17.5
Miscellaneous	.7	.4	--
"Package plan" trips[4/]	.7	5.0	7.6

1/ Returned home at end of each day.
2/ Were away from home at least one night but not more than three nights.
3/ Were away from home four nights or more.
4/ Some skiers, especially those taking vacation trips, used the "package plan." They were not asked to separate the various items included in the price.

Family income	Percent of skiers
Under $4,000	7
$4,000 to $6,499	16
$6,500 to $9,999	29
$10,000 to $14,999	25
$15,000 to $24,999	14
$25,000 and over	6
No answer	3

As might be expected, skiers with high family incomes are more prone to take vacation and weekend trips and to spend more freely on such trips. Eighty percent of skiers with family incomes of $25,000 and over a year take overnight ski trips. On the other hand, only about 50 percent of those with an annual family income of less than $6,500 take such trips. Moreover, the skiers from moderate income families spend less than $40 a day on vacation trips--about one-half the expenditures of those with incomes of $25,000 and over.

The total number of days a person skies each year, oddly enough, is not strongly influenced by income, as shown in the following tabulation:

Annual family income class	Average number of days skied per person
Less than $4,000	9.65
$4,000 to $6,499	9.63
$6,500 to $9,999	9.69
$10,000 to $14,999	10.38
$15,000 to $24,999	10.59
$25,000 and over	13.82

Travel time is a problem

Some people are fortunate enough to live near the slopes, but the skiers living in the West face a 2- to 3-hour drive to reach a ski area. Moreover, much of this driving must be done under winter conditions. As a result, many people find they must schedule overnight trips to enjoy skiing. On the average, California skiers drove 198 miles to ski, and 40 percent of them reported they always stayed overnight whenever they went on ski trips. At the other extreme, Utah skiers drove an average of only 74 miles to ski and less than 1 percent of them always took overnight trips.

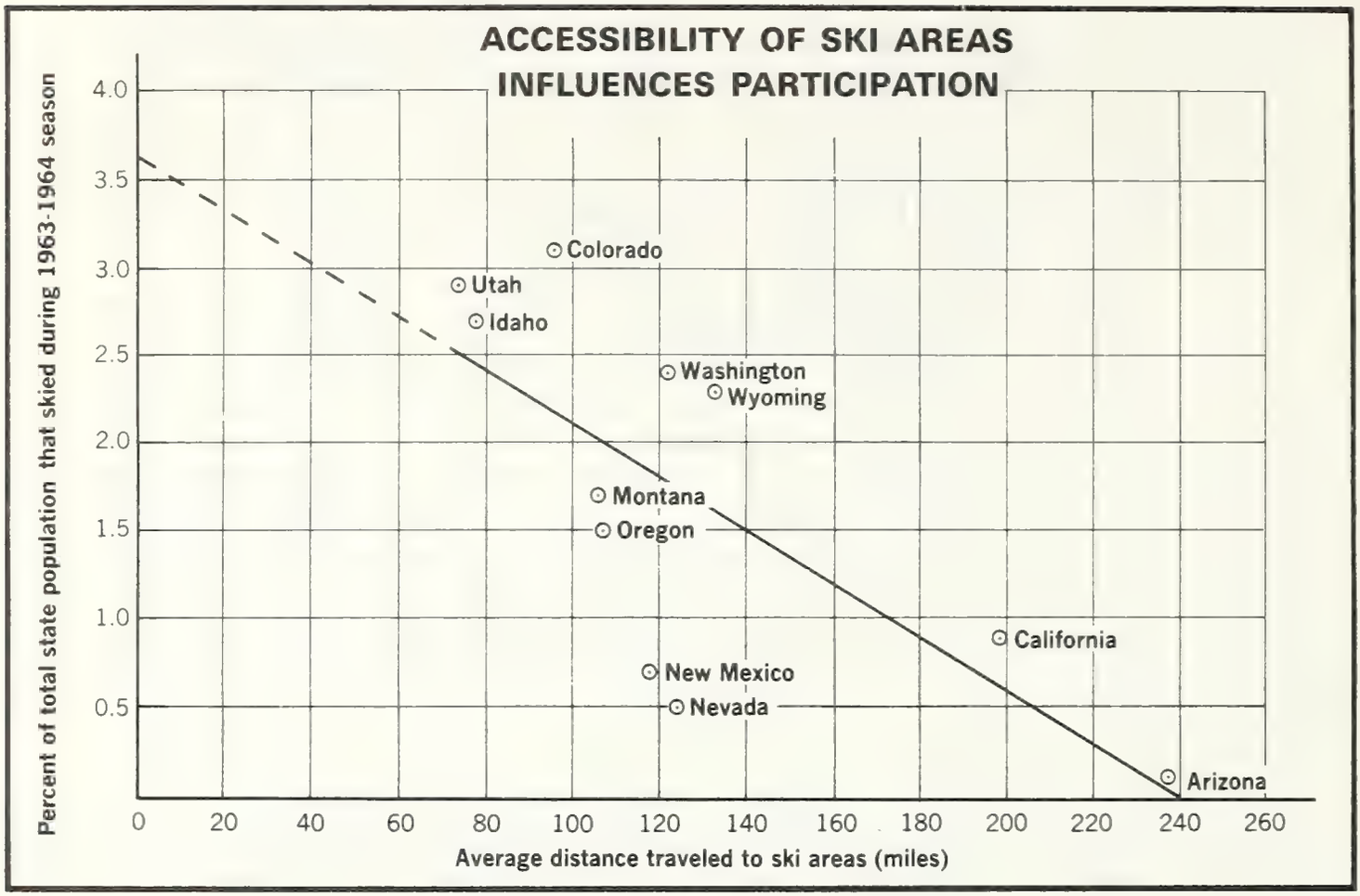
In general, the closer people live to ski areas the more likely they are to ski. The percentages of resident skiers in terms of the total populations of each of the 12 Western States range from a low of 0.1 percent in Arizona (skiers drove an average of nearly 240 miles to ski areas) to a high of 3.1 percent in Colorado (skiers drove an average of 96 miles to a ski area). The chart on the next page shows the relationship between proximity of ski areas and participation.[9]

It might be possible to increase the skier proportion of the population in some States by reducing distance to ski areas. The opportunities would appear to be greater in California and Arizona but more limited in Colorado and Utah. In Utah, for example, 80 percent of the population lives within an hour's drive of excellent ski areas. In spite of this, only 2.9 percent of Utah's population skied during the 1963-64 season. In some States, therefore, travel distance is not among the more important factors limiting increased participation.

It seems unlikely that even a minimal single-day trip can be done in much less than 6 to 8 hours with driving included. Skiing is not a spur-of-the-moment activity. Unlike many other forms of recreation, a ski trip usually must be planned in advance because of the time factor.

Car ownership (or at least availability) is virtually a prerequisite. This poses difficulties for precisely that segment of the population to which skiing has the greatest

[9] Based on the mathematical relationship $Y = 3.64 - 0.0152X$ where X is equal to driving distance. The correlation coefficient (r) is 0.72. Alaska was not evaluated because of its unique travel conditions.



appeal--youngsters in the 13-18 age bracket. Cost of automobile ownership and age restrictions for obtaining drivers' licenses are obstacles for many. Although commercial transportation (bus, train) is a solution for some and may become more generally available in time, the additional costs again eliminate part of the potential skier population.

Many skiers do not participate every year

Factors described above--physical demands, cost, and distance--not only discourage potential skiers from taking up the sport, but also contribute to the failure of many skiers to participate actively year after year.

Among those interviewed, 26 percent who had learned to ski 8 years ago reported missing at least a full season since learning to ski. In addition, the ranks were further depleted by those who quit the sport. It is difficult to estimate the combined total number of permanent and temporary skier dropouts, but such dropouts may have as much as a 10-percent negative effect on annual attendance in the West. In his ski study for the northeastern States, Farwell found that 13.2 percent of those who skied during the 1962-63 season did not ski the following season, and that 1.3 percent of the skiers contacted said they had given up the sport permanently.[10]

[10] U.S. Dep. of Commerce. The skier market in northeast North America, 119 pp., illus. U.S. Govt. Printing Office. 1965.

Skiing habits of the fairer sex contribute to this dropout pattern. Among skiers 20 or under, the population is about equally divided between men and women. By age 30, about one out of every four skiers is a woman and by age 40, one out of every eight is a woman. Marriage and the demands of family responsibilities help explain the relatively rapid depletion in the ranks of women skiers. This is also emphasized by the fact that although 70 percent of married male skiers reported that their wives were skiers, less than one-half of these wives actually skied during the 1964-65 season. Moreover, among married skiers, husbands are more prone than wives to ski without their spouses, as shown by the following tabulation based on participation during the 1964-65 season.

Marital status	Percent
Married	62
Not married	38
Married males whose wives ski	70
Married females whose husbands ski	84

Participation can be increased: better lifts, tows, and slopes one approach

The ski industry can minimize the influence of these deterrents and entice more people to the slopes by continuing to improve facilities for moving people up the slopes and to develop more and a greater variety of slopes. A trend to replace rope tows with safer and more comfortable lifts is already evident. As a result, skiers are able to make more runs per day because they do not become fatigued from clinging to a rope on the uphill journey. The greater availability of the less taxing cable lifts and tows, moreover, has brought skiing within the endurance limits of more people, particularly women.

Cable lifts and tows, furthermore, in general are longer, which makes more of the mountain accessible. For example, the average rope tow ski area in the West has a 383-foot vertical rise in comparison to the more than 1,000-foot vertical rise provided by the average ski area offering cable lift and tow facilities. Although vertical rise in itself doesn't necessarily improve the quality of skiing, it provides greater flexibility in locating ski runs and trails, which in turn provides the skier more choice in selecting alternative downhill routes. Skiers at rope tow areas have an average of three runs from which to choose; large cable areas provide an average of 17 runs. This greater variety makes skiing more interesting and appealing.

The longer runs are spread over more skiable acres, which offer other forms of variety--terrain, challenge, snow conditions, and scenery. The average rope tow area in the West makes available 29 acres of skiable terrain; the larger cable areas make available almost 600 acres of skiable terrain.

Avalanches threaten skier safety at steeper slopes of many ski areas. Improved equipment and techniques in recent years have greatly reduced this hazard. Here a Forest Service avalanche control team uses a compressed air cannon to hurl an explosive charge into a chronic avalanche breeding ground at Snow Basin Ski Area in Utah.

All in all, ski areas in the West now offer a wider spectrum of skiing experiences than they did a few years ago. As a result, skiing has become more fun for more people. Moreover, the trend is toward still larger ski areas with still more variety. These new opportunities also are apt to induce people to ski more, not only each season, but to extend their years as active participants.

The construction of additional ski areas in new locations where need exists also could do much to strengthen the appeal of the sport. Nearly 70 percent of the skiers reported they had visited two or more areas during the 1964-65 skiing season. Although they were not asked why, search for variety was undoubtedly a strong motivation. This also may be the reason that very few skiers (4.4 percent) purchased season tickets. Although season tickets offer savings on lift expenditures, they also tend to tie a skier to an individual area.

Special attention must be given to provide slopes for beginners. Even today a substantial portion (31 percent) of active skiers have been skiing only 2 years or less. The neophyte is apt to feel more competent and derive a greater sense of achievement on moderately steep slopes and consequently is less likely to become an early dropout.

Safer skiing is needed

Undeniably, the threat of broken bones or other injuries is a concern to both prospective and active skiers. Whether justified or not, the cartoon caricatures of the skier in a cast, straddling a tree, or being carried away by an avalanche is an image widely held by the public that the ski industry must overcome.

Better lift designs and construction have helped to reassure the public. So have improved avalanche detection and control techniques. Even more directly reassuring has been the development of the safety binding, which releases the ski from the foot when a fall occurs.

Continued efforts are being made to improve safety features of lift and tow facilities as well as personal equipment. Perhaps more important is the need for better training and education of skiers. The most perfectly designed safety binding has little value if the skier doesn't know how (or won't take the time) to adjust it.

Whatever the industry can do to make skiing less hazardous and to dispel any misconceptions the public may have of the hazards will help increase participation. The study financed by the U.S. Public Health Service and conducted by National Ski Safety Research to determine the cause of skier injuries is a step in the right direction.

Areas needed closer to markets

Wherever possible, ski areas should be developed closer to where people live. The advantage and importance of minimizing travel time is pointed up by the following tabulation:

Capacity class (VTF/hr.)	Attendance (No. of visits)	Distance to metropolitan area (Miles)
Rope only[1]	146,402	157
Less than 300,000	187,021	132
300,000 to 699,999	401,317	141
700,000 to 1,499,999	1,000,598	119
1,500,000 and up	2,529,845	96

[1] Rope areas not rated in VTF/hr.

The obvious advantages of proximity to markets need not be belabored and are in some respects academic. The point is that ski area developers must carefully weigh the advantages of constructing new areas closer to population centers even though initial costs may be considerably greater than for more distant sites.

Artificial snowmaking is a technique that some ski areas have adopted to offset inadequate snowfall and has permitted the development of ski areas near larger cities on sites otherwise suitable for skiing. It also has helped to insure continuous operation during the traditional peak holiday periods even during years of low snowfall.

Snowmaking is fairly expensive. Some large eastern ski areas spend $50,000 or more to produce snow during a season. They have found it profitable, however, because of the increased attendance. Snowmaking is feasible only in locations where the night temperature range is from 20 to 25 degrees. In 1964-65, only 11 western ski areas had

The skier's day does not end with the closing of lifts and tows. The availability of after-skiing sociability is an important consideration for many in choosing where to spend their vacations.

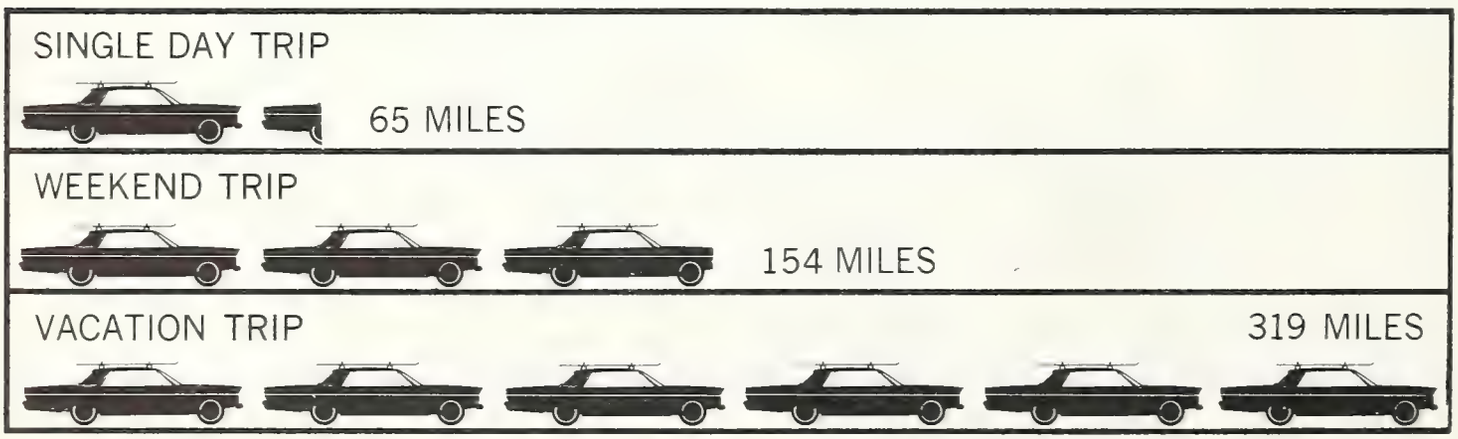
installed snowmaking equipment. Six of these areas are in California, two in Colorado, two in New Mexico, and one in Montana.

Overnight accommodations facilitate skiing for many

Obviously if a skier must face a drive of more than about 4 hours to reach a ski area, he probably will have to stay away from home overnight. Although accommodations are generally available within less than an hour's drive from virtually all ski areas, there are certain advantages to staying at ski resort lodges. On-site lodging not only eliminates daily commuting, but provides the opportunity to enjoy the convivial after-ski atmosphere and exchange tales of derring-do.

Vacation and weekend trips provide a definite advantage over single-day trips from the standpoint of time spent skiing in comparison to time spent traveling. The chart below shows the average distance traveled by automobile on each of the three

AVERAGE DISTANCE TRAVELED TO SKI AREAS



types of trips during the 1964-65 season. Using the average distances shown in the chart, along with certain assumptions as to driving speed, hours of skiing per day, and nights away from home, we can make the comparisons shown below:

Kind of trip	Hours of skiing per hour of travel [1]
Single-day	1.89
Weekend	2.42
Vacation	2.73

[1] Assumptions are: (1) an average driving speed of 50 miles per hour on all types of trips, (2) 5 hours skiing per day, (3) two nights away from home on weekend trips, and eight nights on vacation trips.

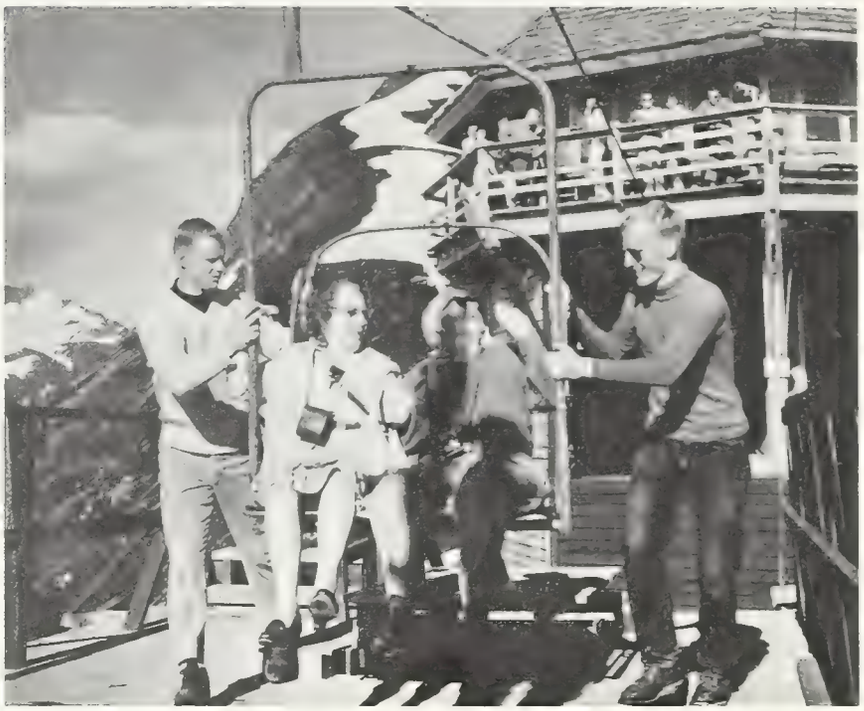
Inadequate base service facilities was the single factor most frequently mentioned by operators of bigger ski areas as inhibiting growth. Apparently many operators recognize that more lodges and restaurants would minimize the time-distance factor, which tends to hold down attendance. Unfortunately, however, ski season business alone seldom provides an adequate return on investments in overnight accommodations because they are occupied only about 4 months of the year. For this reason, many ski areas that cater to the overnight trade provide summer activities, such as golf, swimming, horseback riding, scenic lifts, and so forth.

Few small ski areas provide extensive lodging and restaurant accommodations. This is reflected in the following tabulation, which shows average facilities per ski area of such accommodations for the various size ski areas.

Capacity class (VTF/hr.)	Lodging (No. of beds)	Restaurant (No. of seats)
Rope tow	2	29
Less than 300,000	6	38
300,000 to 699,999	9	71
700,000 to 1,499,999	81	171
1,500,000 and up	209	426

Accommodations are especially important to attract nonwestern skiers. The heavily populated Midwestern States represent a potentially large vacation-skier market primarily for ski areas in Montana, Wyoming, Colorado, and New Mexico. At present, a substantial part of the skiing done in Colorado and New Mexico is done by nonwestern skiers. So far, neither Montana nor Wyoming has apparently attracted significant numbers of skiers from this market.

Many ski areas have developed into year-around recreation centers to realize an adequate return on their capital investment in lodges and lifts. Summer use of lifts, such as is shown here at Alyeska near Anchorage, Alaska, enables non-skiers, too, to enjoy the alpine country. Many ski areas are becoming focal points for developments of recreation homes--such as those near the Cloudcroft Ski Area in New Mexico. The skier can have a home of his own near the slopes during the winter months, as well as a summer vacation retreat.



The potential of the midwestern ski market is one of the biggest "sleepers" in any prediction of the pattern of ski area growth in the Western States. The midwestern ski population is growing and the conveniences of jet age air travel are bringing western ski vacations within the reach of these skiers. Colorado played host to approximately 20,000 nonwestern skiers--many from the Midwest--during the 1963-64 season.

Lift and tow capacity probably will not need to increase as rapidly as attendance

If attendance increases threefold by 1976, lift capacity will only have to expand 2.5 times because of the trend towards increased midweek use. Such an increase is roughly equivalent to 250 modern high-speed cable lifts.

Most ski areas reported proportionately more midweek attendance during the 1963-64 ski season than during the 1955-56 season. During the 1955-56 season, approximately 20 percent of the annual attendance was recorded on weekdays. During the 1963-64 season, 30 percent of total attendance was recorded on weekdays. We may assume that by 1976 as much as 40 percent of the total attendance will occur during the weekdays. If 40 percent of the 12.1 million skier visits projected for 1976 do occur during the midweek period, future ski areas will need to provide for approximately 7.29 million visits during the weekends and holidays. Assuming that the lift and tow requirements per skier visit will remain approximately the same as during the 1963-64 season, capacity will need to increase proportionately as shown below:

$$\frac{\text{3 million weekend visits in 1963-64}}{\text{193.3 million VTF/hr. in 1963-64}} = \frac{\text{7.29 million weekend visits in 1976-77}}{\text{469.7 million VTF/hr. in 1976-77}}$$

There are two factors which may reduce at least slightly the needed increase in ski lift facilities. They are: (1) the increasing number of areas that are offering "night skiing." (During the 1964-65 season, 37 areas had electrically lighted runs); and (2) the availability of snowmobiles and helicopters at a few areas for those who want to "pioneer" beyond the slopes served by cable facilities.

Use of helicopters as an "extra" lift facility, especially to transport skiers beyond developed trails, may increase and could influence the amount of lift construction needed in the future. (Sun Valley Photo.)

Sites for new ski areas are plentiful

Lack of skiing terrain is not likely to inhibit growth of skiing in the Western States. A survey of State and Federal land management agencies identified 166 sites as having potential for future development as ski areas.[11]

These sites certainly do not represent the entire available supply; rather they are those located in vicinities where demand is most likely to develop in the near future. We can reasonably assume that Wyoming and Alaska, for example, have many more potential sites than are shown on the map (opposite page). The present demand for skiing in both States is not sufficient to stimulate very much "prospecting" for potential sites. Nevertheless, the map does give some idea regarding the relative abundance of potential new ski sites. There are more undeveloped potential sites than developed sites in every State in the West, except for California and Colorado. We might conclude that new ski sites are somewhat more difficult to locate in both California and Colorado. This is understandable, for together these States already account for nearly 50 percent of the existing ski area lift and tow capacity in the Western States.

The survey of potential sites was conducted merely to locate areas, not to appraise their individual economic feasibility. They are, for the most part, areas that appear to offer adequate snow conditions and terrain for skiing. More critical examination could reveal physical drawbacks or economic conditions that would limit or even preclude successful operation of some sites. Nevertheless, the total number of sites that apparently could be developed is large. The capacity of the 166 potential sites that have been identified probably amounts to about 236 million VTF/hr.--about equal to the capacity already developed in the 12 Western States.

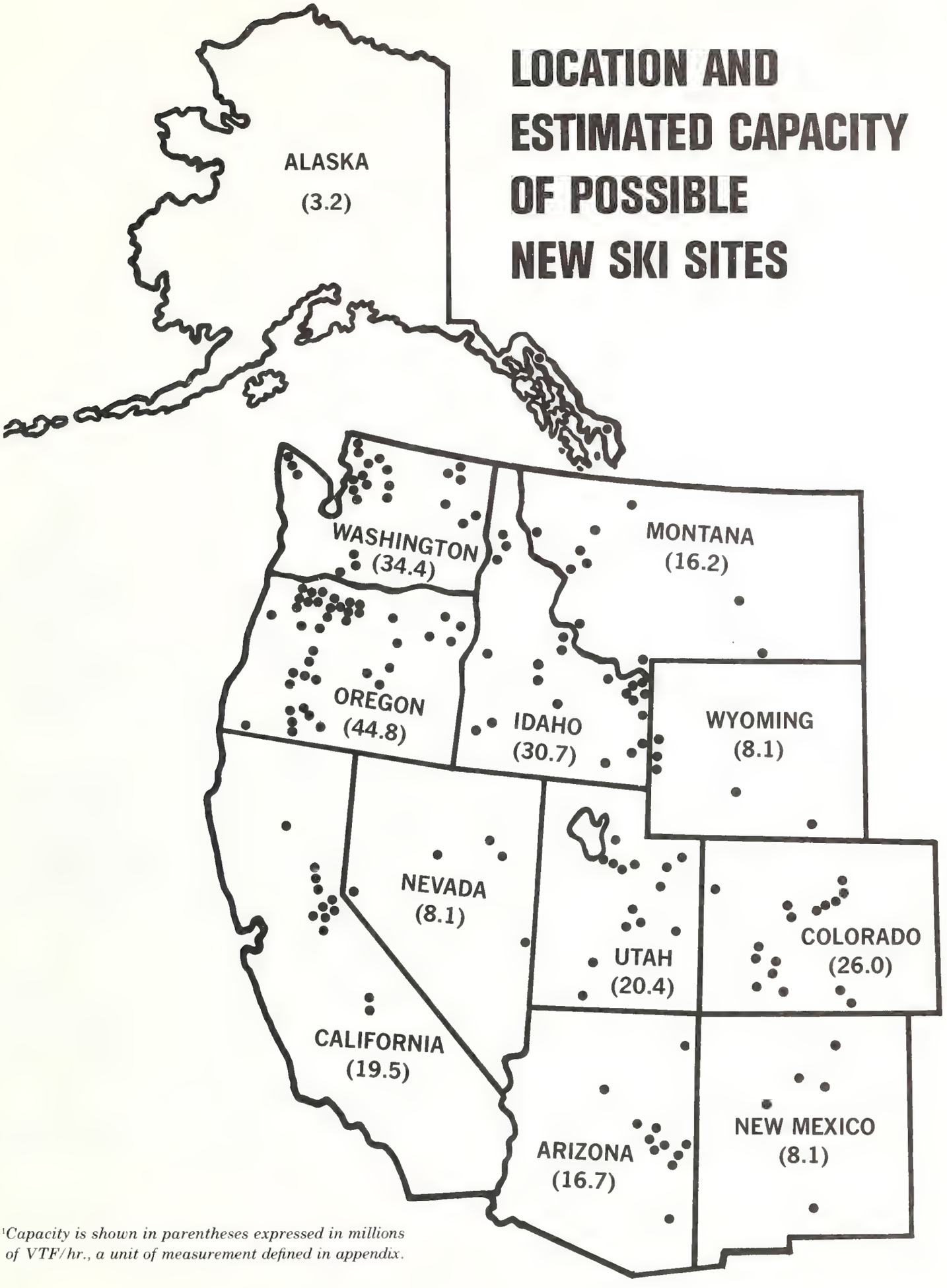
Some idea of the relative importance of problems that must be considered in developing new ski areas is provided by the following tabulation, which is based on problems noted by operators in answer to question 15:[12]

Problems	Percent
Inadequate base service facilities	42
Climate, lack of snow	27
Poor roads, maintenance	18
Inadequate lift capacity	18
Inadequate skiing terrain or area	17
Distance from skier residence	14
Competition from other ski areas	11
Lack of capital for expansion or improvement	6
Inadequate advertising budget	2
Miscellaneous	14

[11] See p. 60 for detailed data collection procedures, and pp. 85-90 for site listing.

[12] The operators were asked to give a general appraisal of problems; they were not given a list of suggested problems to check.

LOCATION AND ESTIMATED CAPACITY OF POSSIBLE NEW SKI SITES



[1]*Capacity is shown in parentheses expressed in millions of VTF/hr., a unit of measurement defined in appendix.*

As might be expected, relative importance of these factors varies somewhat with the size of areas. Small areas tend to emphasize climate, roads, and lift capacity as being more important than base service facilities. Although lack of capital is indicated as being relatively low in priority, financing problems were undoubtedly basic reasons involved in the reasoning of those who noted base service facilities and lift capacity as problems.

New lifts totaling 96.8 million VTF/hr. are scheduled for construction by 1970 at existing ski areas. This is more than one-third of the 255 million VTF/hr. estimated as needed by 1976. However, development plans for some of the potential sites shown on the map are far enough along that 11.5 million VTF/hr. are scheduled to be in operation by 1970. How rapidly other new sites are developed depends in large measure on how much additional capacity is added to existing ski areas.

Skiing is an important economic consideration in many communities

Although skiing is not a big factor in the western economy as a whole, when compared to the agricultural or manufacturing segments, the ski business is highly important to individual communities. In some locations such as Aspen, Colorado; Ketchum, Idaho; and Park City, Utah, skiing has been the catalyst that has stimulated other businesses and other economic activities. The infusion of skier spending influences the economic tempo by providing additional wages and income to a community. Part of this additional revenue is circulated within the community, and successive rounds of respending of the initial skiers' expenditures are multiplied several times. In some cases, the multiplier may be as high as three, but probably it is less than two for smaller communities.[13]

More than 15,000 man-days per week were required for operating lifts and tows, and for slope maintenance, as well as for managerial and clerical work at western ski areas during the 1963-64 season. Wages paid to these employees totaled $6 million--an average of $31,040 per ski area. This total includes only that employment directly connected with the operation and maintenance of lifts and slopes; it does not include the wages paid to employees at lodges, restaurants, motels, gas stations, etc. No data were collected during this survey regarding the latter employees.

Skiers spend a considerable sum on trips each year--totaling about $88.4 million. Not all of this sum benefits the skiing communities, because it includes $16.5 million for transportation (gasoline, car services, public transportation, etc.), most of which is spent outside the skiing community. Part of the money spent for lodgings, meals, ski rental, and ski repair is also made outside of the skiing community. None of the money spent by local residents for skiing can be regarded as addition to the economic base.

---

[13] Edminster, Robert R., and Osmond L. Harline. An economic study of the proposed Canyonlands National Park and related recreation resources. Bur. Econ. and Bus. Res., Univ. Utah, Salt Lake City, Utah. 1962.

About $26.7 million was spent on skiing equipment by western skiers during the 1963-64 season--mostly at department stores, ski shops, and sporting goods stores in the skier's hometown. Together with trip expenditures, this adds up to a $115.1 million industry for the West.

Promotion efforts will need to be intensified

During the 1964-65 season, average annual advertising budgets per ski area varied from less than $200 a year for small ski areas to over $14,000 for larger areas, as reflected in the following tabulation:

Size class	Average
Rope only	$ 158
Less than 300,000 VTF/hr.	727
300,000 to 699,999 VTF/hr.	718
700,000 to 1,499,999 VTF/hr.	4,337
1,500,000 VTF/hr. and over	$14,179

Larger ski areas budget about 4 percent of gross revenues from lift ticket sales for advertising. This compares favorably with the advertising expenditures of the resort business.

In addition to direct advertising by ski areas and their associations, there is a trend towards greater promotion of skiing by State tourist and travel bureaus. Skiing also gets free promotion from newspaper and TV coverage of competitive events.

Both skiers and potential skiers are influenced by their exposure to this promotion. Potential skiers may be encouraged to try the sport. Curiosity about skiing conditions, promise of new terrain, and more challenging slopes may motivate the experienced skier to test newly advertised ski areas. Most skiers are intrigued by the idea of visiting new areas. Nearly 70 percent of the skiers sampled reported that they had skied at two or more ski areas during the 1964-65 skiing season, as shown by the tabulation below:

Percent of skiers	No. of areas skied
31	1
24	2
19	3
12	4
7	5
3	6
2	7
2	8 or more

It is entirely possible that a large part of the skiers who reported visiting only one ski area were first-year skiers who were concentrating more on learning basic skiing techniques than on searching for new challenges in ski terrain. Because 20 percent of the skier population was skiing for the first time in the 1964-65 season, it is also possible that as much as 90 percent of skiers who had skied for longer than 1 year actually had visited at least two different areas. The fact that 45 percent of skiers had skied at three or more areas suggests that skiers generally want to try their skills under different conditions.

Nearly one out of five skiers took a ski vacation on which he stayed away from home four or more nights. These vacation trips almost always are to distant areas. Advertising undoubtedly plays a part in determining where the skier vacations.

Greater public motivation--the key to expansion

The skiing industry and those connected with it have developed an increasingly surefooted sophistication in lift design and installation, trail construction, parking lot snow removal, and other details of successful ski area operation. Knowledge of their customers, however, is far less complete.

Dealing as they are with a luxury service rather than a necessity, ski areas are vulnerable to changing interests. Ski areas are more in competition with other recreation enterprises than they are with one another. With only minor exceptions, each family's recreation activities are constrained by funds available for that purpose. Neither the money available for recreation nor the motivation of those with a choice are constants. A decision made during one season affects what is done during another. For example, the family that elects to take a summer vacation may not have either the time or the money to ski during the following winter. Even an increase in family income may not result in more ski visits. The additional funds may be all that is needed to make possible a trip to the Virgin Islands or Hawaii.

Despite the glamour of the sport, there are many alternatives competing for the public's leisure time. Many forms of recreation are less demanding and less expensive.

If the ski industry is to become fully competitive, it must understand the motivations of skiers and would-be skiers far better than it does now. What are skiers looking for? What does skiing offer that golfing or motorboating doesn't? Why do people really stop skiing? Is it because they can't afford skiing, or because they'd rather do something else with the money and time?

These and many other relevant questions aren't easily answered. Nevertheless, improved insight would help the ski industry motivate people to become skiers and keep them from becoming dropouts. Well-focused market research programs could well prove our present vision of the future is too conservative.

APPENDIX

Bureau of Budget Number 40-6501
Approval expires June 30, 1965

WESTERN STATES SKI AREA OPERATOR QUESTIONNAIRE

Name of area _____

Mailing Address _____

Ski area is located _____ on Highway No. ____
(direction)

_____ miles from _____, _____
(city) (state)

Name of manager or interviewed person:

_____

Date of interview _____ Interviewer _____

1. Give date (year) in which site was first developed for skiing: _____

2. Site description

   a. Number of acres on this site considered "skiable" at present stage of development is: _____ acres
   (Include all natural open slopes as well as cleared runs and trails served by ski lifts and/or tows.)

   b. Estimate the percent of the "skiable" area represented by trails and runs cut through dense timber. ____ percent

   c. The maximum vertical rise of the "skiable" area is: _____ feet

   d. General aspect of site is: (circle one) N, NE, E, SE, S, SW, W, NW

   e. Opening date 1963-64 season was: _____
   (month, day, year)

   Closing date 1963-64 season was: _____
   (month, day, year)

   f. Do you use snow-making equipment? Yes /__/ No /__/

g. Slope maintenance: Check one of the following which most nearly describes the slope maintenance program employed at your ski area.

(1) /__/ Brush regularly removed; larger rocks covered or removed; some erosion control.

(2) /__/ Intensive annual grooming of slopes; rocks larger than 3 inches removed; slopes planted to grass and maintained in good sod condition.

3. Advertising budget

Total expenditure for all advertising during 1963-64 skiing season was $_____; 1964-65 $_____.

4. General location and accessibility	1963-64	1964-65
a. Road distance (in miles) from site to nearest town of 5,000 population or more:	____miles	____miles
b. Road distance (in miles) from site to nearest paved all weather road:	____miles	____miles
c. Road distance (in miles) from site to nearest U.S. interstate highway:	____miles	____miles

5. Climate	1963-64	1964-65
a. Number of days on which temperature did not get above 0 degrees (Fahrenheit):	_____days	_____days
b. Number of days for which shutdown was necessary for more than ½ day for each of the following causes:		
Wind	_____days	_____days
Fog	_____days	_____days
Avalanche	_____days	_____days
Storm	_____days	_____days
Lack of snow	_____days	_____days
Other (specify) _____	_____days	_____days
c. Average packed snow depth at base of site in mid-February was:	___inches	___inches

6. Skier attendance. List the total number of skier visits for each season, 1955 through 1964-65. Estimate attendance from available ticket records or revenue records. Do not include nonskiers. A "skier visit" is one person visiting a ski area for all or any part of a day for the purpose of skiing.

SKIER ATTENDANCE

Season	Cost of day ticket	Total number skier visits	Estimated percent of visits during weekends and holidays*
1964-65	$		
1963-64	$		
1962-63	$		
1961-62	$		
1960-61	$		
1959-60	$		
1958-59	$		
1957-58	$		
1956-57	$		
1955-56	$		

*Holidays are December 25 through January 1, and February 22.

7. Nonski season attendance. List the number of lift tickets sold to visitors during the 1964 spring, summer, and fall tourist season.

No. of tickets sold _____

Cost per ticket $_____

8. Skier attendance during "optimum" conditions

From your memory and/or records, will you estimate the total number of visitors (skiers) on any single day during the 1963-64 and 1964-65 skiing seasons when (1) all lifts were operating, and (2) the lift lines were for the most part about 10 to 12 minutes long.

Total number of skiers during single day when "optimum" conditions prevailed was:

_____(1963-64)

_____(1964-65)

9. Lift facilities description

Describe all lift and tow facilities that are now used or that have been used on the site since 1955 or date of initial development if site was developed after 1955. Describe all facilities even though they have been replaced or are inoperative. Use one line for each lift or tow.

Type of lift (single chair, rope, T-bar, etc.)	Lift or tow length (in feet)	Vertical rise of lift or tow (in feet)	Year when lift or tow was constructed	Year lift or tow operation was discontinued	Lift or tow capacity in skiers per hour		Number of weeks operated during 1963-64				Number of weeks operated during 1964-65		
					Manufacturer's maximum rated capacity	Actual maximum operating capacity	Period of day operated	6 or more days per week	3-5 days per week	2 days or less per week	6 or more days per week	3-5 days per week	2 days or less per week
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
							Day						
							Night						
							Day						
							Night						
							Day						
							Night						
							Day						
							Night						
							Day						
							Night						
							Day						
							Night						
							Day						
							Night						
							Day						
							Night						

10. Auxiliary services and/or facilities
(Estimates will be sufficient)

	1963-64	1964-65
a. On-site (that area within walking distance of lifts and tows)		
1. (a) Seating capacity of on-site restaurants: (number of seats) . . .	_____	_____
(b) Services provided: (Check those which apply)		
Breakfast	_____	_____
Lunch	_____	_____
Supper	_____	_____
Snack bar	_____	_____
Other (describe)	_____	_____
_____	_____	_____
_____	_____	_____
2. Capacity of on-site lodging per night: (Number of beds)	_____	_____
3. Number of automobile parking spaces available: (Number of spaces)	_____	_____
4. Number of children enrolled in a free ski school sponsored by community or other organization:	_____	_____
5. Number of certified ski instructors at the area	_____	_____
b. Nonskiing activities: (Check those applicable and write in others not listed.)		
1. Ice-skating	_____	_____
2. Sledding	_____	_____
3. Tobogganing	_____	_____
4. Dancing	_____	_____
5. Swimming	_____	_____
6. Summer tourist lift rides	_____	_____

		1963-64	1964-65
7.	Other (specify)		
	_____	_____	_____
	_____	_____	_____

b. Off-site

1.	(a) Seating capacity of off-site restaurants within 15-minute drive: (Number of chairs or seats)	_____	_____
	(b) Services provided: (Check those which apply)		
	Breakfast	_____	_____
	Lunch	_____	_____
	Supper	_____	_____
	Snack bar	_____	_____
	Other (describe)	_____	_____
	_____	_____	_____
	_____	_____	_____
2.	Capacity of off-site lodging within 15-minute drive: (Number of beds)	_____	_____
3.	Nonskiing activities available within 15-minute drive: (Check those applicable and write in others not listed.)		
	(a) Ice-skating	_____	_____
	(b) Sledding	_____	_____
	(c) Tobogganing	_____	_____
	(d) Dancing	_____	_____
	(e) Swimming	_____	_____
	(f) Summer tourist lift rides	_____	_____
	(g) Other (specify)	_____	_____
	_____	_____	_____
	_____	_____	_____

11. Employment and wage data for lift and tow operation, 1963-64 and 1964-65.

a. Average man-days of employment by primary job per week, 1963-64, and 1964-65:

Primary job	Average man-days employment per week					
	Year-long employees		Seasonal employees			
			Skiing season		Nonskiing season	
	1963-64	1964-65	1963-64	1964-65	1963-64	1964-65
Managerial						
Clerical						
Operating lifts and/or tows (Include equipment and slope maintenance)						
Paid ski patrol	XXXX	XXXX			XXXX	XXXX
Other (specify)						
TOTAL						

b. Total wages paid to:

	1963-64	1964-65
Full-time yearlong employees	$_____	$_____
Winter skiing season employees (Includes season-long and part-time employees)	$_____	$_____
Nonskiing season employees (Includes season long and part-time employees)	$_____	$_____
Total all employees	$_____	$_____

12. Trails and runs

The total number of basic trails and runs skiable from lifts and tows operated during the 1963-64 and 1964-65 skiing seasons	1963-64	1964-65
from lifts:	_____	_____
from tows:	_____	_____

13. Expansion opportunity

a. Is there opportunity to install and operate more lifts and/or tows

(1) At your present site? (Check) Yes___ No___

(2) On adjacent land that has suitable topography and could be developed as part of your present ski area? (Check)

Yes___ No___

b. If "No" in both (1) and (2) above, skip to question 14.

c. If "Yes" in either or both (1) and (2) above, describe any lift facilities you definitely plan to install.

Lift type	Manufacturer's rated capacity (skiers per hour)	Vertical rise of lifts	Planned installation date

d. How much additional "skiable" acreage would such expansion provide? _____acres

14. Market area

What are the principal cities, towns, or metropolitan areas from which your ski area draws its attendance? Limit to four.

City	State	Approximate percentage of total annual attendance by each listed city
_____	_____	_____ Percent
_____	_____	_____ Percent
_____	_____	_____ Percent
_____	_____	_____ Percent

15. What factors do you feel limit growth of skier attendance at your area? Why?

_____

_____

_____

HOW SURVEY OF SKI AREA OPERATORS WAS CONDUCTED

An attempt was made to visit every ski area that had been in operation during the period 1955 to 1964 as well as all areas that were operating during the 1964-65 season. Operators of ski areas operating under permit from the Forest Service were contacted by employees of the National Forests on which these areas were located. Operators of ski areas on private, State, and other Federal lands were contacted by employees of the Intermountain Forest and Range Experiment Station.

Each was asked to fill out a Ski Operator Questionnaire (see page 30) while the interviewer was present. If this wasn't possible, the operator was asked to return his completed questionnaire by mail.

A total of 223 ski areas were contacted, 197 of which were operating during the 1963-64 season. Of these, 171 had kept the necessary records and were willing to fill out the questionnaire. Owners of 20 of 26 ski areas that had formerly been in operation also filled out questionnaires.

In those situations where the operator was either unwilling or unable to complete the questionnaire, the interviewer was instructed to make the best estimate of both attendance and lift and tow capacity from whatever sources he could. Frequently, records maintained by National Forests were used. In the few cases of lost or missing records, attendance was estimated as similar to that of nearby ski areas with like facilities and capacity. For the most part, these were smaller ski areas with limited attendance and lift/tow facilities. Combined attendance estimated for all such ski areas was less than 4 percent of the total skier visits recorded during the 1963-64 skiing season. Although no measurement of accuracy of attendance information is possible, the error is unlikely to exceed ±5 percent of the total.

PROCEDURE FOR DETERMINING CAPACITY OF LIFTS AND TOWS

Lift and tow capacity was expressed as the Vertical Transport Feet (VTF) generated in 1 hour. The formula used to calculate VTF/hr. is given below:

$$VTF/hr. = (VR)\ (NR),$$

where

VR = Vertical rise of a lift in feet
NR = Number of rides per hour generated by the lift. (This is usually expressed by ski lift manufacturers as "skiers per hour.")

Total lift and tow capacity per hour was derived from question 9 (see questionnaire). The VTF/hr. capacity was calculated by multiplying the vertical rise of the lift or tow (col. 3, question 9) by the reported skiers per hour capacity of the lift or tow (col. 7, question 9).

Manufacturers generally rate the capacity of lifts and tows in "skiers per hour" or "rides per hour." Such figures, however, are not additive because a "ride" at one area may be much shorter than a "ride" at another ski area. Because of the differences in length of lifts, the ride capacity figure is peculiar to each ski lift or tow. In effect, lifts and tows have a machine capacity to haul skiers to the top of a certain ski hill at a certain rate of speed. However, the actual number of skiers the ski area can accommodate during a given day depends on skier behavior. If each skier took only one ride a day, the manufacturer's rating in skiers per hour would be adequate. But skiers seldom, if ever, are willing to travel to a ski area for a single ride. Depending on their skill, the length and steepness of the hill, the number of other skiers, weather conditions, and other factors, they may take as many as 30 or 40 rides or as few as 5 or 6 rides during a day. The "average skier" probably takes a different number of rides at each area because of these variations.

The noncomparability of capacity stated in skiers per hour is illustrated by the following example: Ski area X has a lift with a rated capacity of 1,000 skiers per hour while ski area Y's lift is rated at only 500 skiers per hour. On the surface it appears that X has twice as much capacity as Y and should be able to serve twice as many skiers in a day. However, area X has a 500-foot vertical rise, and Y has a 1,000-foot vertical rise. Skiers at area X are transported a much shorter distance than skiers at area Y. The same skier will want more rides per day at X than at Y because he skies a shorter distance down after each ride and will be less tired after one run at X than he would at Y. It is possible that one skier might take twice as many runs at X as he would at Y, because the vertical rise is twice as great at Y. In either case, the skier would have traveled the same number of vertical feet. If the skier at area X takes 10 rides on the 500-foot lift, he has traveled 5,000 vertical feet, the same as the skier at Y who took only 5 rides on a 1,000-foot hill.

By multiplying the rated capacity of skiers per hour by the vertical rise, we can express lift and tow capacity measure that is additive and allows comparison of different lifts and areas. In the example above, both areas X and Y have equal capacity. (Area X: 1,000 skiers per hour X 500 vertical feet = 500,000 Vertical Transport Feet (VTF) per hour. Area Y: 500 skiers per hour X 1,000 vertical feet = 500,000 VTF per hour.)

Lifts are run at less than optimum speed because the skiers can't move from the waiting line into the loading position quickly enough. This may be due to skier inexperience, poor ramp design, or both. Weather problems of wind also force the operator to run the lift or tow at something less than maximum safe speed. For these reasons VTF/hr. capacity was calculated on the basis of the operators' estimated actual operating rate of skiers per hour rather than the manufacturers' rated capacity of skiers per hour.

The capacity of rope tow facilities is difficult to determine because ropes are frequently homemade and do not have a manufacturers' rated capacity. Rope tows, unlike cable lifts and tows, do not have specified places for each skier as do chairs, platters, or T-bars. In general, operators are less certain about the vertical rise and the skiers-per-hour capacity of their rope tows. For these reasons, estimates of the rope tow capacity are more or less educated guesses.

PROCEDURE FOR COLLECTING ATTENDANCE DATA

Attendance was defined as the total number of daily visits by skiers who purchased and used lift or tow tickets for all or any part of a day for the purpose of skiing. Such a visit is called a "skier visit."

Attendance data were obtained from the area operators' answers to question 6 (see questionnaire). If complete records of ticket sales were available, attendance was calculated by determining the number of each kind of ticket sold, the number of visits each kind of ticket represented, and converting the number of tickets sold into total number of visits for each season.

In most cases, the interviewer worked with the operator to prepare the estimate by using the worksheets shown on the following pages. Basically this involved: (1) computing the "average cost per visit" for the 1963-64 skiing season according to the instructions for worksheet 1, (2) calculating the average cost per visit for the other skiing seasons back to 1955-56 as explained in worksheet 2, and (3) finally converting ticket sales revenue into the number of skier visits as explained in worksheet 3.

If the area operator had only kept data on gross revenue from ticket sales, he was asked to estimate the average amount collected per skier visit (for the use of lifts or tows) during the 1963-64 skiing season and then calculate (1) the average cost per skier visit for the other seasons as explained on worksheet 2, and (2) the number of skier visits from the gross ticket sales revenue for each season as explained on worksheet 3.

If the operator didn't keep either ticket or revenue records, he was asked for his "best estimate" of total skier attendance.

Using these procedures, we were able to obtain estimates of attendance for almost all western ski areas. Operators of only a few small ski areas were unable to provide such information. Estimates were made for these by assuming such areas had had attendances equal to similar-sized ski areas in their vicinities. For the most part, these were small rope tow areas.

Although the questionnaire requested attendance figures for the 1964-65 season, most operators were unable to supply these figures because that ski season was still underway at the time they received the questionnaire.

Worksheet 1.--Calculating average cost per skier visit, 1963-64 skiing season.

Name of ski area: _____

Type of ticket (1)	Cost per ticket (2)	Number of visits per ticket (3)	Number of tickets sold (4)	Gross ticket revenue (5)	Total number of visits (6)
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
	$				
Total	XXXX	XXX	XXX		
Average cost per skier visit during 1963-64 (col. 5) ÷ (col. 6) = $_____					

Step 1. Enter in col. 1 all the various kinds or types of tickets sold during the 1963-64 skiing season. (For example: Day pass, $\frac{1}{2}$-day pass, single ride on rope, season pass, 10-ride ticket, special group rate day pass, night pass, etc.)

Step 2. Enter in col. 2 the cost of each ticket type listed in col. 1.

Step 3. Enter in col. 3 the operator's estimate of the average number of "visits" made to his area to utilize a single ticket of each ticket type sold. A skier "visit" is one trip to the area by one skier for all or part of one day for the purpose of skiing.

Most tickets are valid only during a specific day. Examples are the day pass or the $\frac{1}{2}$-day pass. Such tickets would have a value of "1" in col. 3.

Other tickets are valid on several days. A 7-day pass, for example, is good for 7 visits; a 3-day pass is good for 3 visits, etc. A season pass is good for an unspecified number of visits. The operator must estimate the number of

visits made by the average season pass holder using his area. Few areas sell many season tickets.

Single-ride tickets pose a different problem in that a skier will usually use more than one ticket during a visit. For example, the operator estimates that skiers who buy single-ride tickets usually purchase an average of 10 tickets during the day. The number of visits per ticket must be calculated by dividing 10 into 1, or .1 visit per ticket. In this case enter .1 in col. 3 for rope tow single-ride tickets.

Note: IF operator has records showing the total number of each kind of ticket sold during the 1963-64 season, complete steps 4, 5, 6, 7, and 8. If such ticket records are not available, skip to step 9.

Step 4. Enter in col. 4 the total number of tickets sold of each ticket type during the 1963-64 season from the operator's records.

Step 5. Calculate total number of visits for each ticket type and enter in col. 6.
Calculation procedure: (col. 3) X (col. 4)

Step 6. Enter total gross revenue from ticket sales during the 1963-64 skiing season at bottom of col. 5. Get data (1) from operator's records or (2) calculate gross revenue for each ticket type (col. 2 X col. 4). Enter answer in col. 5, than add col. 5 to get total gross ticket revenue for the 1963-64 season.

Step 7. Total col. 6.

Step 8. Calculate average cost per skier visit and enter in blank at bottom of table.
Calculation procedure: (total col. 5) / (total col. 6)

Alternate procedure:

Step 9. Enter in col. 5 the gross revenue received from ticket sales of each ticket type from operator's records.

Step 10. Calculate number tickets sold of each ticket type and enter in col. 4.
Calculation procedure: (col. 5) / (col. 2)

Step 11. Calculate total number of visits for each ticket type.
Calculation procedure: (col. 3) X (col. 4)

Step 12. Total col. 5 and enter at bottom.

Step 13. Total col. 6 and enter at bottom.

Step 14. Calculate average cost per skier and enter in blank at bottom of table.
Calculation procedure: (total col. 5) / (total col. 6)

Worksheet 2.--Calculating average cost per skier visit for skiing seasons prior to 1963-64 season.

Step 1. Enter "cost of day pass during 1963-64" from col. 2, worksheet 1, here $_____.

Step 2. Enter "average cost per skier visit during 1963-64" as computed on worksheet 1 $_____.

Season (1)	Cost of day pass (2)	Day pass cost ratio (3)	Average cost per skier visit (4)
1964-65	$		$
1963-64	$		$
1962-63	$		$
1961-62	$		$
1960-61	$		$
1959-60	$		$
1958-59	$		$
1957-58	$		$
1956-57	$		$
1955-56	$		$

Step 3. Enter in col. 2 the cost of day pass for each season, 1964-65 through 1955-56, supplied by the ski area operator.

Step 4. Calculate day pass cost ratio for each season and enter in col. 3.

$$\text{Calculation procedure: } \frac{\text{(Cost 1963-64 day pass)}}{\text{(Cost year-X day pass)}}$$

Step 5. Calculate average cost per skier visit for each season and enter in col. 4.

Calculation procedure: (Average cost per skier visit, 1963-64)

X (Day pass cost ratio for specific season)

Note: The average cost per skier visit will change only when the cost of a day pass changes. These calculations are needed only for those seasons when the cost of the day ticket is different from that shown for the 1963-64 season.

The process used in estimating the average cost per skier visit is represented by the following formula:

$$\frac{\text{Cost of day pass, 1963-64}}{\text{Cost of day pass, season in question}} = \frac{\text{Average cost per skier visit, 1963-64}}{X}$$

where

X = average cost per skier visit for any year.

Worksheet 3.--Calculation of number of skier visits for other skiing seasons.

Skiing season (1)	Gross ticket revenue (2)	Average cost per visit (3)	Total number of skier visits (4)
1964-65	$	$	$
1963-64	$ *	$ *	$ *
1962-63	$	$	$
1961-62	$	$	$
1960-61	$	$	$
1959-60	$	$	$
1958-59	$	$	$
1957-58	$	$	$
1956-57	$	$	$
1955-56	$	$	$

*From worksheet 1

Step 1. Enter in col. 2 the gross ticket revenue for each skiing season from operator's records.

Step 2. Enter in col. 3 the average cost per skier visit for each skiing season from worksheet 2, col. 4.

Step 3. Calculate total skier visits for each season and enter in col. 4.

Calculation procedure: $\frac{\text{(col. 2)}}{\text{(col. 3)}}$

ESTIMATING LIFT AND TOW UTILIZATION

Ski area operators were asked to estimate the maximum number of skiers that could use their 1964-65 tows and lifts on a single day without having them wait longer than 10 to 15 minutes. (See question 8.) Using this as a measure, the answers showed that about 19.1 million skier visits a year would saturate the existing capacity. This is far more than the 4.3 million visits actually recorded. Even on weekends and holidays, the operators indicated they could have handled 6.2 million visits, more than twice the number of skier visits actually recorded during weekends and holidays. Based on the operators' appraisal, nearly 50 percent of the available lift and tow capacity was not being used even during the generally crowded weekends and holidays.

Another way of judging how fully existing facilities are being utilized is to convert the VTF ratings calculated for the lifts and tows into potential number of skier visits possible on any single day. It has been estimated that the average skier wants about 8,000 VTF per day of skiing.[14] This would be eight trips per day down a hill with 1,000 feet of vertical drop or 16 trips per day down a hill with 500 feet of vertical drop. This 193,299,839 VTF per hour of lift and tow capacity available in 1963-64 meant that 966,499,195 VTF were available to skiers during a day.[15] If each skier were to use 8,000 per visit, this capacity would satisfy 120,812 skier visits during any single day (966,499,195 / 8,000 = 120,812). This would be available at cable and rope facilities as shown below:

Type	Total capacity (VTF/hr.)	Capacity (Skier visits/day)
Cable	155,939,799	97,462
Rope	37,360,040	23,350
Total	193,299,839	120,812

Applying this figure to an average 80-day season indicates that western ski areas would theoretically have been able to handle 9.7 million skier visits during the 1963-64 season (80 X 122,350 = 9,664,960). Because only 4.3 million visits were recorded during this season, western cable and rope capacity was apparently only 44 percent utilized that season. (4.3 million actual visits / 9.6 million visit capacity = 44%)

---

[14] U.S. Dep. of Commerce. The skier market in northeast North America, p. 63. Wash. D.C.: U.S. Govt. Printing Office. 1963.

[15] Assuming 5 hours of effective operation daily. Most ski areas operate 7 hours per day, starting at about 9 a.m. and stopping at 4 p.m., without any lunch break. However, all lists and tows are seldom fully operative during the entire day. Weather, mechanical difficulties, and other problems reduce the amount of time the lifts actually run. For these reasons, the full 7-hour day has been discounted to 5 hours.

However, as the tabulation below shows, the degree of utilization was significantly higher during the weekend-holiday portion of the season, particularly on the cable facilities.

Type of facility	Weekends, holidays	Weekdays	Overall season
		Percent	
Cable	92	24	49
Rope	43	11	23
Combined	82	21	44

These calculations, it should be emphasized, are based on the assumed rate of 8,000 VTF per skier per day being a fairly true reflection of what the skiers want. If this assumption is incorrect, the results would be very different. Also, the lift and tow capacity discussed here includes the capacity of both the rope and cable lifts and tows available. Although it is difficult to do more than guess at the attendance on rope tows alone, we estimate that not more than 10 percent of the total annual skier attendance, or about 426,000 visits, was accounted for by skiers using rope tows.[16]

Although available cable capacity is slightly excessive even during heavy demand weekend-holiday periods, the apparent discrepancy does not seem too great. The ski area business has been growing very rapidly. In this growth situation, ski area managers have been forced to estimate additional lift and tow needs 2 to 3 years ahead. One can conclude that ski area managers have skillfully matched cable capacity and demand.

The apparent overcapacity of rope tow facilities again emphasizes the preference of today's skier for the safer and easier-to-ride cable lifts and tows. It also suggests that ski area operators may overestimate the actual capacity of their rope tows.

The excess capacity available during the midweek period is no surprise. For all practical purposes, the ski area business must relate itself to time that people are free to ski--generally on the weekends rather than on the weekdays.

[16]Available records did not separate skier attendance by cable or rope facilities. However, ski areas that provided only rope tow facilities accounted for only 3.4 percent of total annual attendance during the 1963-64 ski season. We estimate that rope tows available at areas that provide both cable and rope facilities may receive double that use. Therefore, approximately 10 percent of total annual attendance may have been handled on rope tows.

RELATING PAST ATTENDANCE TO THE FUTURE

Increases in population, disposable income, and leisure time between the 1955-56 and 1963-64 skiing seasons have all been closely associated with increases of total annual skier attendance. This relation can be expressed mathematically as shown in the formula below:

$$Y = 6045.603 + 347.35926X_1 + 5901.3576X_2 - 534.634X_3$$

where

Y = Skier attendance in thousands of visits
X_1 = Population of Western States in millions of persons
X_2 = Per capita income of U.S. in thousands of 1960 dollars
X_3 = Leisure hours per week per worker.

These independent variables account for 95 percent of the variations of total annual skier attendance between the 1955-56 and 1963-64 seasons.

Using the values for X_1, X_2, and X_3 estimated for 1976 by the Outdoor Recreation Resources Review Commission,[17] future skier attendance can be projected for that year. Regression analysis of the past relationship between skier attendance and these three factors indicates that 12.1 million skier visits may be expected by 1976.

This is based on the assumption that today's conditions of peace and prosperity will continue. An economic recession, for example, would undoubtedly reduce the amount of skiing below the projected figure (see table 14).

---

[17] Outdoor Recreation Resources Review Commission. Prospective demand for outdoor recreation. Study Rep. 26, p. 6. Wash. D.C.: U.S. Govt. Printing Office. 1962.

HOW THE SURVEY OF SKIERS WAS CONDUCTED

Names and addresses of skiers were collected at all operating ski areas on weekends in February, March, and April of 1965. Every tenth skier passing the investigators stationed at the various lift lines was asked to participate in the ski study, until approximately 10 percent of the skiers present that day had been contacted. At the same time, the investigators categorized the age of each sample skier as being a child (1-12), teenager (13-19), or adult (over 19).

Altogether 5,984 skier names and addresses were collected by the U.S. Forest Service Snow Rangers and employees of the Intermountain Forest and Range Experiment Station. Questionnaires were mailed in mid-May to all these skiers except 231 recorded as being children. (Bureau of the Budget restricted questioning persons younger than age 13.) Thus, 5,753 skier questionnaires were mailed (of which 93 were returned unopened because of incorrect addresses).

By mid-June, 3,512 completed questionnaires had been returned, so a second mailing was made to those who had not responded to the first. By mid-August, another 1,121 questionnaires had been received, which made a total of 4,633 answers out of a possible 5,660 valid names. Because of this excellent response, no further attempt was made to contact the remaining skiers who failed to return questionnaires. These nonrespondents were assumed to have the same characteristics as respondents.

Twelve percent (565) of the returned questionnaires failed to show the number of times the skier had skied during the year; such questionnaires were rejected as unusable because no weighting factor could be assigned to the individual answers. Therefore, this report is based on 4,068 completed skier questionnaires.

This skier survey had two basic shortcomings. First, the questionnaire could be mailed only to skiers 13 years old and older. Therefore, the results apply only to an incomplete sample of the active skier population. Second, skiers younger than 19 were not asked to answer questions 5 through 8 concerning family income and marital status because of restrictions by the Bureau of the Budget. Therefore, the data pertaining to marital and income status can be applied only to that part of the skier population 19 or older.

U.S. Forest Service
Intermountain Forest & Range Experiment Station

Bureau of Budget No. 40-6527
Approval Expires Sept. 30, 1965

INT No.

WESTERN STATES SKI POTENTIAL STUDY

SKIER QUESTIONNAIRE

Please print your name and address in this space.

Name: _____
(Last) (First) (Initial)

Address: _____
(Street number) (City) (County) (State)

1. In what year did you first ski on slopes or hills? 19____

2. How many years have you gone skiing at least once since you started to ski? _____ (Years)

3. Do, or did either of your parents ski? Circle one: ONE BOTH NEITHER

4. Indicate your age by checking appropriate space below.

☐ Under 13 years	☐ 13-18 years	☐ 19-22 years
☐ 23-30 years	☐ 31-40 years	☐ 41-50 years
☐ Over 51 years		

IF YOU ARE UNDER 19 YEARS OF AGE, SKIP TO QUESTION 9 BELOW.

5. a. What is your approximate annual income before taxes and payroll deductions?

NOTE: Married persons should indicate the joint income of both husband and wife. Students living at home, or away from home, and largely or completely dependent on family support, should indicate the combined income level of themselves and their parents.

Check ( ) the appropriate income category below.

( ) Less than $4,000 per year	( ) $4,000 to $6,499 per year
( ) $6,500 to $9,999 per year	( ) $10,000 to $14,999 per year
( ) $15,000 to $24,999 per year	( ) $25,000 per year and over

b. Number of persons largely or completely dependent on family support. _____ (Number)

6. Are you (circle one) married? single? divorced? widowed?

7. If married, does your husband or wife ski? Circle one: YES NO

8. If married, how many of your dependent sons and daughters ski? _____ (Number who ski)

9. a. How many members of your family living at home, or away at school (including yourself) are in your household? _____ (Number)

   b. How many of these are skiers? _____ (Number)

10. Did you have a season lift ticket at a ski area for the 1964-65 ski season?

    Circle one: YES NO

    If "YES," about how many days did you use it during the season? _____ (Number of days)

11. Approximately how many different ski areas did you ski at during the 1964-65 ski season?

    _____ (Number of areas)

12. Estimate the total expenditure for ski equipment purchased for yourself during the 1964-65 ski season. (Include skis, boots, clothing, etc.) $_____

13. a. Did you take one or more "SKI VACATION" trips during the 1964-65 ski season on each of which you were away from home FOUR OR MORE NIGHTS with the primary purpose of participating in skiing? Circle one: YES NO

    If "NO," skip to question 14. If "YES," complete question 13.

    b. How many SKI VACATION TRIPS did you take during the 1964-65 ski season? _____

    c. In what States did you take these SKI VACATIONS and how many days did you ski on these trips?

State in which you skied	Number of days skied on vacation trip
_____	_____
_____	_____
_____	_____
_____	_____

    d. What was the total cost for yourself only of such SKI VACATION TRIPS during the 1964-65 ski season? Estimate the approximate total cost for each of the items listed below. Include both the amount you personally spent and any amounts spent for you by someone else. (Do not include expenditures you made for friends or family members who accompanied you.)

(1) Vacation "package plan" $_____
(2) Lodging and meals $_____
(3) Ski lift tickets $_____
(4) Ski equipment rental and/or repair $_____
(5) Ski school instruction $_____
(6) After-ski activities (entertainment, bar, etc.) $_____
(7) Ski equipment (skis, poles, boots, waxes, clothing, etc., purchased at your vacation destination) $_____
(8) Other major expenditures (specify) _____ $_____

e. If you traveled by commercial carrier, what was your share of the transportation cost on your SKI VACATION TRIPS? $_____

f. If you traveled by private auto, how many miles (round trip) did you travel on a TYPICAL SKI VACATION? _____ (Miles) How many persons were in the car? _____ (Number)

14. a. Did you take any WEEKEND SKI TRIPS during the 1964-65 ski season on which you stayed at least one night away from home but less than four nights?

Circle one: YES NO

If "NO," skip to question 15. If "YES," complete question.

b. How many such WEEKEND SKI TRIPS did you take during the 1964-65 ski season?

_____ (Number)

c. Estimate the number of days you skied on WEEKEND SKI TRIPS by State in which you skied, during the 1964-65 skiing season.

State in which you skied	Number of days skied on weekend trip
_____	_____
_____	_____
_____	_____

d. What was the cost for yourself only for a TYPICAL WEEKEND of skiing during the 1964-65 ski season? Indicate the approximate expenditure for each of the items listed below. Include both amount you personally spent as well as the amount spent by someone else for you. (Do not include expenditures you made for friends or family members who accompanied you.)

(1) Weekend "package plan" $_____

(2) Lodging and meals $_____

(3) Ski lift tickets $_____

(4) Ski equipment rental and/or repair $_____

(5) Ski school instruction $_____

(6) After-ski activities (entertainment, bar, etc.) $_____

(7) Ski equipment or clothing purchases $_____

(8) Other major expenditures (specify)_____ $_____

e. If you traveled by commercial carrier, what was your share of transportation cost on a typical WEEKEND SKI TRIP? $_____

f. If you traveled by private auto, how many miles (round trip) did you travel on a typical WEEKEND TRIP? _____ (Miles) How many persons were in the car? _____ (Number)

15. a. Please indicate below the number of days you spent skiing during the 1964-65 ski season on SINGLE-DAY SKI TRIPS on which you returned to your home at the end of each day of skiing.

State in which you skied	Number of days skied on single-day trips
_____	_____
_____	_____
_____	_____
_____	_____

b. What was the cost for yourself only, for a TYPICAL SINGLE-DAY SKI TRIP? Estimate the approximate cost for each item listed below. Include both the expenditure you personally made for yourself as well as expenditure made for you by someone else. (Do not include expenditures you made for friends or family members who accompanied you.)

(1) Ski lift tickets $_____

(2) Meals or snacks $_____

(3) Ski equipment rental and/or repair $_____

(4) Ski school instruction $_____

(5) After-ski activities (entertainment, bar, etc.) $_____

(6) Ski equipment or clothing purchases $_____

(7) Commercial transportation $_____

(8) Other major expenditures (specify)_____ $_____

c. If you traveled by private auto, approximately how many miles (round trip) did you travel on a TYPICAL SINGLE-DAY SKI TRIP? _____ (Miles) How many persons were in the car? _____ (Number)

16. Indicate your sex. Circle one: MALE FEMALE

17. Circle the highest year of school you have completed.

1 2 3 4 5 6 7 8 (Grade School) 9 10 11 12 (High School) 13 14 15 16 (University or Trade School) 17 18 19 20 (Graduate)

18. Are you a student? Circle one: YES NO

If "YES," skip question 19.

If "NO," answer question 19.

19. a. What is your occupation? _____

b. Who is your employer? _____

Thank you for completing this questionnaire. Please return in the addressed envelope which requires no stamp to:

Intermountain Forest & Range Experiment Station
Division of Forest Economics & Recreation Research
U.S. Forest Service Ski Study
Forest Service Building, 507 - 25th Street
Ogden, Utah 84403

ADJUSTMENT FOR SAMPLING BIAS

The design for sampling contained an inherent source of bias inasmuch as skiers who skied frequently during the season were more likely to be selected than skiers who skied only occasionally. To the extent that frequent skiers as a group had unique characteristics, the sample results would tend to exaggerate these characteristics and underestimate the characteristics of the less frequent skier. This bias can be eliminated by using the method proposed by Lucas.[18] The method weights the number of skiers and the number of visits by the reciprocal of the number of visits per skier.

The following examples show how this bias can influence estimates of population characteristics and how the bias is avoided when the weighting method is used.

Example 1:

A known population of 400 skiers has the following participation characteristics:

100 skiers each visiting 30 times per season = 3,000 skier visits
300 skiers each visiting 5 times per season = 1,500 skier visits

The average number of visits per skier is 11.25 ($\bar{X}$ = 4,500 / 400 = 11.25). It appears that there would be three times as many 5-day skiers as 30-day skiers on any given day. But the 30-day skiers made twice as many visits as the 5-day skiers (3,000 / 1,500). Therefore, theoretically there would be twice as many 30-day skiers as 5-day skiers on any given day. If a 10-percent sample were selected on a particular day when 150 skiers were present, the sample would probably consist of 15 skiers with the following characteristics:

10 skiers who ski 30 times per season
5 skiers who ski 5 times per season

If the average number of visits per season were estimated from this sample, it would be biased upward as shown below:

10 skiers visiting 30 times per season = 300 visits
5 skiers visiting 5 times per season = 25 visits
$\bar{x}$ = 325 / 15 = 21.7 visits per skier per season

The considerable difference between the known average days skied per season (11.25) and the average estimated from the sample (21.7) results from the inevitable biases. By applying Lucas' method, an unbiased estimate of the population mean rate of annual participation can be obtained from this sample as shown below:

(5 skiers) (5 visits) $(\frac{1}{5})$ = 5 visits by (5) $(\frac{1}{5})$ or 1.000 skier
(10 skiers) (30 visits) $(\frac{1}{30})$ = 10 visits by (10) $(\frac{1}{30})$ or .333 skier
$\bar{x}$ = 15 / 1.333 = 11.25 visits per skier

[18] Lucas, Robert C. Bias in estimating recreationists' length of stay from sample interviews. J. Forest. 61(12): 912-914. 1963.

The sample estimate produces the true population mean ($\overline{X} = \overline{x} = 11.25$) when computed in this manner. The bias shown in the example above is due to the unequal probability of each member of the population to be selected for the sample. This bias also influences the estimated proportion of the population having a particular attribute. The example below illustrates this point.

Example 2:

A population of 4,500 skiers has the characteristics shown below:

1,500	male skiers visiting 20 times per season	= 30,000 visits
500	female skiers visiting 20 times per season	= 10,000 visits
1,000	female skiers visiting 5 times per season	= 5,000 visits
1,500	male skiers visiting 10 times per season	= 15,000 visits

The proportion of female skiers is:

$P = 1,500 / 4,500 = 33.3$ percent

If a sample of 6 percent were randomly selected on a day when 400 were skiing, the sample would probably contain 24 skiers with the following characteristics:

12	male skiers who each visit 20 times per season
4	female skiers who each visit 20 times per season
2	female skiers who each visit 5 times per season
6	male skiers who each visit 10 times per season

Estimating the population proportion of female skiers (P) in the usual manner provides the sample estimate: $P = 6 / 24 = 25$ percent. Thus, sample estimates of population proportions or attributes are also affected by the number of days of skiing a skier does during a season. By applying the method suggested, the bias is removed.

(12 male skiers) $(\frac{1}{20})$	= 0.6	male skiers
(4 female skiers) $(\frac{1}{20})$	= .2	female skiers
(2 female skiers) $(\frac{1}{5})$	= .4	female skiers
(6 male skiers) $(\frac{1}{10})$	= .6	male skiers
Total	1.8	skiers (0.6 female skiers)

The estimate, therefore, of the proportion of female skiers in the population as derived from the sample is 33.3 percent (0.6 / 1.8).

The sample estimate is equal to the population parameter ($P = p = 33.3$ percent); therefore, it is unbiased. This weighting method was used to adjust estimates of skier responses.

HOW THE SKIER POPULATION ESTIMATE WAS DERIVED

The skier population is composed of two groups--those who actively ski during any specific season and those who don't. Data in this report apply only to that part of the total skier population that was active during the 1964-65 skiing season.

The procedure used to estimate the number of active skiers was to divide the total number of skier visits made to ski areas within each State during the season by the average number of visits (days) per skier reported by skiers contacted during the survey.

Not all of the skier visits to a State, however, were made by residents of that State. For this reason, it was necessary to determine the proportion of total State visits made by residents of that State, residents of other Western States, and residents of non-Western States. These proportions were derived from the skier sample in which each skier reported the number of ski visits he made to each Western State during the season. For example:

1. One million visits were reported by ski area operators in State A.
2. Skiers questioned reported making a total of 1,000 visits to ski areas in State A in the following proportions:
   a. Residents made 80 percent of the visits to ski areas in State A.
   b. Nonresidents from other Western States made 15 percent of the visits in State A.
   c. Nonresidents from other non-Western States made 5 percent of the visits.
3. The total 1 million skier visits to State A can then be attributed to the three skier resident classes as follows:
   a. Residents, 800,000 visits
   b. Nonresidents from other Western States, 150,000 visits
   c. Nonresidents from non-Western States, 50,000 visits
4. If the average number of visits per skier during the season by skiers in each of these three residency classes were 10, 5, and 8 visits, respectively, the number of active skiers who used ski areas with the State can then be calculated as follows:

   a. $\frac{\text{800,000 visits by residents}}{\text{10 visits/yr./skier}}$ = 80,000 resident skiers

   b. $\frac{\text{150,000 visits by nonresidents from other Western States}}{\text{5 visits/yr./skier}}$ = 30,000 skiers from other Western States

   c. $\frac{\text{50,000 visits by nonresidents from non-Western States}}{\text{8 visits/yr./skier}}$ = 6,250 skiers from non-Western States

It was necessary to separate the resident from the nonresident skiers to avoid counting them more than once because many skiers had skied in several of the Western States.

Total numbers of visits per State were available only for the 1963-64 season. On the other hand, the skiers questioned described their activities during the 1964-65 season. Therefore, the proportion of resident and nonresident visits and average days skied per skier relating to the 1964-65 season were used to convert the 1963-64 attendance data. This created an opportunity for error in estimating the size of the skier population for a State if either the proportion of resident to nonresident skier visits or the average number of days skied per skier changed substantially between the two seasons. Although it seems unlikely, because both seasons had adequate snowfall, the size of the resident skier population could be either larger or smaller than that estimated.

All references to numbers of skiers apply to the 1963-64 season. Proportions of the skier population's particular characteristics (age, sex, etc.) relate to the 1964-65 skier population.

RELIABILITY OF SKIER DATA

Because all skier data are based on samples rather than on an inventory, the estimates are subject to some error dependent on the size and completeness of the sample. Reliable measures of the sample estimates for (1) the average number of days skied during the season per skier, (2) the average expenditure per skier, and (3) the percent of the skier population having specific attributes such as age, sex, income, and others are presented in the following tables:

Table 2 shows the estimated average (mean) number of days skied per resident and nonresident skier during the 1964-65 season within each State and gives the standard error of each average (mean) as a plus or minus (±) figure. In Alaska, for example, we would expect to find the average (or mean) between 16.478 and 16.522 days per season per skier. The true average of the entire population can generally be expected to be not more than ±0.1 of a day larger or smaller than that estimated from the sample.

Table 3 shows the estimated average (mean) daily expenditure per skier during the 1964-65 season and shows the standard error of each average (mean) as a plus or minus dollar amount. In Alaska, for example, we should expect the true average daily expenditure per resident skier to be somewhere between $11.54 and $18.92.

Table 4 shows the confidence limits (at the 95-percent level[19]) for five different percentage groups for the skier population that may be estimated to have a certain characteristic--such as the percent of skiers that are males, females--or that fall in a particular income class, age group, etc. In Alaska, for example, the confidence

[19] The 95-percent confidence level indicates that the true proportion would fall within the plus or minus range indicated 95 out of 100 times sampled.

interval for the estimate that 90 percent of Alaskan skiers were male would be ±15.80 percent. The true percentage of the male skiers would probably be between 74.2 percent and 100 percent.

The confidence percentages for either 90 percent or 10 percent, 80 percent or 20 percent, 70 percent or 30 percent, 60 percent or 40 percent, and 50 percent or 50 percent, are listed in the same column to save space in this table. In the Alaskan example just given, the same confidence interval would apply to an estimate that 10 percent of the Alaskan skiers were male as to the estimate that 90 percent were male.

The table does not give confidence intervals for percentages other than even 10-percent increments. However, the reader can interpolate between one column and the next. For example, the confidence interval for the estimate that 85 percent of the Alaskan skiers were over 30 years old would fall approximately halfway between 15.80 and 20.26 percent, or about 18 percent.

Table 5 gives the confidence limits in the same fashion as table 3. Table 4 is to be used when the skier population question is limited to skiers 19 years old and older. Thus, table 4 can be used to determine the confidence limits for skier population estimates describing the percentage of the skiers in (1) particular income classes, (2) proportion of married male or female skiers, and (3) other percentages specifically identified as applying only to skiers above the 19-year age limit.

Table 2.--Average (mean) number of days skied per skier and the standard error of that average (mean) during the 1963-64 season, by State and residency class[1/]

State	Residents of State		Residents of other Western States		Residents of non-Western States	
	Av.	Std. error	Av.	Std. error	Av.	Std. error
Alaska	16.5	± 0.022	2.0	± NA[2/]	2.0	± NA
Arizona	5.4	± .070	1.5	± .04	1.0	± NA
California	7.7	± .006	3.8	± .02	3.3	± .15
Colorado	11.0	± .002	5.5	± .02	7.7	± .01
Idaho	11.2	± .013	5.4	± .01	3.4	± .07
Montana	11.8	± .013	3.2	± .02	11.1	± .13
Nevada	9.9	± .041	2.7	± .04	0	± .0
New Mexico	10.7	± .018	3.2	± .02	4.1	± .04
Oregon	10.3	± .012	5.7	± .03	3.6	± .09
Utah	10.9	± .007	4.8	± .02	5.8	± .10
Washington	9.4	± .010	2.3	± .02	6.3	± .04
Wyoming	7.3	± .024	2.7	± .02	2.1	± .25

[1/] Although we should expect to find a different average if we sampled again, the true average can be expected to fall within the plus or minus (±) range of the standard error 66 out of 100 times the population is sampled. For a more complete discussion see "Statistical Methods" 5th Ed. by G. W. Snedecor, 1956, the Iowa State College Press, Ames, Iowa.

[2/] Insufficient sample to calculate standard error.

Table 3.--Average (mean) daily expenditure per skier and the standard error of that average (mean) during the 1963-64 season by State and residency class

State	Average daily expenditure per skier			
	All skiers		Nonresidents[1/]	
	Av.	Std. error	Av.	Std. error
Alaska	$15.23	± $3.69	[2/] NA	
Arizona	18.16	± 1.10	NA	
California	27.44	± .39	NA	
Colorado	25.84	± .71	$60.27	± $2.53
Idaho	18.92	± .75	71.60	± 17.29
Montana	11.75	± .32	NA	
Nevada	17.28	± .67	NA	
New Mexico	21.12	± .65	39.20	± 1.87
Oregon	13.58	± .55	NA	
Utah	11.98	± .37	NA	
Washington	11.22	± .15	14.75	± .77
Wyoming	10.92	± .40	NA	
All States	$20.54	± .23	--	

[1/] Residents of non-Western States.

[2/] Sample size inadequate to calculate mean daily expenditure.

Table 4.--Confidence limits for percentages of the entire skier population estimated to have certain characteristics during the 1964-65 season[1/]

State	Sample size	90 or 10	80 or 20	70 or 30	60 or 40	50 or 50
	Number	- - - - - - - - - -	Percent	- - - - - - - - - -		
Alaska	21	±15.80	±20.26	±22.88	±24.28	±24.74
Arizona	30	±12.81	±16.53	±18.69	±19.87	±20.23
California	1,204	±1.76	±2.34	±2.68	±2.86	±2.92
Colorado	604	±2.52	±3.34	±3.82	±4.06	±4.14
Idaho	416	±3.06	±4.04	±4.62	±4.92	±5.02
Montana	127	±5.73	±7.51	±8.55	±9.11	±9.29
Nevada	51	±9.46	±12.30	±13.94	±14.84	±15.12
New Mexico	105	±6.36	±8.32	±9.46	±10.08	±10.28
Oregon	229	±4.18	±5.52	±6.28	±6.70	±6.84
Utah	233	±4.15	±5.45	±6.23	±6.65	±6.77
Washington	636	±2.46	±3.24	±3.72	±3.96	±4.04
Wyoming	102	±6.45	±8.45	±9.61	±10.23	±10.43
Other	310	±3.58	±4.70	±5.38	±5.74	±5.84
Total	4,068	±.95	±1.25	±1.43	±1.55	±1.57

[1/] Confidence levels given are at the 95-percent level.

Table 5.--Confidence limits for percentages of the skier population 19 years and older estimated to have certain characteristics during the 1964-65 season[1/]

State	Sample size	90 or 10	80 or 20	70 or 30	60 or 40	50 or 50
	Number	- - - - - - - - - -	Percent	- - - - - - - - - -		
Alaska	14	±20.21	±25.75	±28.99	±30.75	±31.31
Arizona	26	±13.92	±17.92	±20.26	±21.52	±21.92
California	965	±1.97	±2.61	±2.99	±3.19	±3.27
Colorado	480	±2.84	±3.74	±4.28	±4.58	±4.66
Idaho	298	±3.65	±4.81	±5.49	±5.85	±5.97
Montana	93	±6.80	±8.88	±10.10	±10.76	±10.96
Nevada	35	±11.71	±15.15	±17.15	±18.23	±18.33
New Mexico	79	±7.43	±9.69	±11.01	±11.73	±11.95
Oregon	151	±5.23	±6.85	±7.81	±8.33	±8.49
Utah	137	±5.50	±7.22	±8.22	±8.76	±8.94
Washington	451	±2.93	±3.87	±4.43	±4.73	±4.83
Wyoming	59	±8.73	±11.35	±12.89	±13.71	±13.99
Other	299	±3.65	±4.81	±5.47	±5.85	±5.95
Total	3,087	±1.10	±1.44	±1.66	±1.78	±1.82

[1/] Confidence levels given are at the 95-percent level.

HOW INVENTORY OF POTENTIAL NEW SITES WAS CONDUCTED

The purpose of the inventory was to determine the number, size, location, and possible skier capacity of known potential ski sites. Federal and State agencies were asked to describe any potential ski sites with which they were familiar. Agencies contacted were the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, and county representatives of the Economic Development Administration. Each agency was mailed a supply of forms, which asked for information about each site as follows:

1. Name of potential site. This should refer to the drainage or range of mountains where the site is located if no name designation has been given the area.

2. Location.

a. Name of nearest city or town. This will provide a reference point in locating the area.

b. Mileage to nearest city or town. Estimate distance from the town to the area.

c. Direction from nearest city or town. Compass direction from nearest city or town; i.e., N., NE., S., etc.

d. Highway nearest the site. The highway number designation of the highway nearest to the site.

e. State. State in which the area is located.

3. Skiable acreage. Estimate the acreage of area at the site that will be served by lifts and/or tows and considered skiable. Exclude acreage needed for buildings and parking at the base of the site, extremely rocky areas, areas too steep for skiing, and areas with insufficient snow cover.

4. Approximate vertical rise. The vertical distance in feet from the base of skiable area to top of skiable area.

5. Approximate number of days in ski season. Indicate length of the possible skiing season in days. Use records or observations if available.

6. Indicate if definite plans have been prepared for development. If plans have been prepared and area will be operating by the 1967-68 season, describe lifts and/or tows scheduled for installation as follows:

a. Name of potential site. Give same name as shown on inventory form.

b. Type of lift or tow planned. Indicate type as rope tow, double chair lift, single chair lift, poma, T-bar, J-bar, etc.

c. Vertical rise of planned lifts or tows. The vertical distance (in feet) that the lift will move the skier up the slope.

d. Rated capacity in "skiers per hour" for each planned lift. Indicate the approximate number of skiers the lift will be able to move up the slope in one hour.

e. Estimated completion date. Give the year in which facility will be completed.

TABLES 6-47

Table 6.--Number of visits[1/] to western ski areas, by State and ski season, 1955-64

State	Ski seasons								
	1955-1956	1956-1957	1957-1958	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963	1963-1964
Alaska	7,130	7,140	6,990	9,870	11,166	26,651	36,274	49,751	46,061
Arizona	2,000	1,900	1,900	2,850	2,950	3,250	3,700	8,230	10,021
California	498,197	475,664	630,599	519,550	670,243	730,100	1,073,480	576,441	1,242,908
Colorado	243,066	283,985	324,630	392,226	476,832	496,111	604,302	618,713	883,828
Idaho	118,655	118,183	135,600	129,080	145,521	168,723	191,270	152,802	292,467
Montana	51,236	54,000	56,363	64,595	90,732	108,189	126,144	132,118	161,459
Nevada	12,500	12,500	13,000	13,000	13,500	15,500	14,500	29,500	31,500
New Mexico	13,000	15,408	22,690	26,929	45,010	53,157	76,558	91,631	109,944
Oregon	71,039	72,461	85,602	92,914	140,120	142,514	176,440	152,835	359,538
Utah	120,879	147,280	161,775	189,407	195,349	235,570	264,164	210,206	340,277
Washington	199,384	255,028	277,706	365,885	355,353	455,503	501,979	536,766	725,679
Wyoming	16,288	16,734	18,308	19,614	33,455	41,749	45,078	42,808	61,501
Total	1,353,374	1,460,283	1,735,163	1,825,920	2,180,231	2,477,017	3,113,889	2,601,801	4,265,183

[1/] A visit is one person visiting a ski area for all or any part of a day for the purpose of skiing.

Table 7.--Number of skier visits during 1963-64 season by size class of ski area and by State

State	Size class[1/]					Total
	Rope tow only	Cable tows (rated in VTF/hr.)				
		Less than 300,000	300,000 to 699,999	700,000 to 1,499,999	1,500,000 and over	
Alaska	14,139	--	6,000	25,922	--	46,061
Arizona	--	1,700	1,740	6,581	--	10,021
California	30,771	63,816	70,760	325,296	752,265	1,242,908
Colorado	--	47,605	48,210	87,256	700,757	883,828
Idaho	2,600	24,206	52,198	115,632	97,831	292,467
Montana	26,647	20,125	26,628	35,235	52,824	161,459
Nevada	1,000	2,500	--	--	28,000	31,500
New Mexico	--	2,547	27,200	26,427	53,770	109,944
Oregon	10,802	10,985	77,484	260,267	--	359,538
Utah	15,194	3,000	455	61,446	260,182	340,277
Washington	38,621	7,800	55,056	39,986	584,216	725,679
Wyoming	6,628	2,737	35,586	16,550	--	61,501
Total	146,402	187,021	401,317	1,000,598	2,529,845	4,265,183
Percent of total	3.43	4.39	9.41	23.46	59.31	100

[1/] Ski areas with cable facilities are rated on the basis of vertical transport feet per hour (VTF/hr.), as defined on page 38. Rope tows are not so rated.

Table 8.--Total capacity of both cable and rope tow areas in the Western States, by State, and by ski season, 1955-65

(In million vertical transport feet per hour)[1/]

State	Ski season									
	1955-1956	1956-1957	1957-1958	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963	1963-1964	1964-1965
Alaska	0.57	0.57	0.57	0.57	1.05	3.22	3.22	3.50	3.15	3.15
Arizona	.24	.24	.34	.34	.34	.34	.34	1.49	1.81	1.85
California	24.63	26.27	29.47	31.59	34.02	35.94	41.87	46.01	50.19	57.65
Colorado	7.10	9.97	13.75	16.65	18.10	20.95	24.90	34.38	38.37	42.56
Idaho	6.04	6.06	8.84	9.40	11.14	11.93	13.70	14.21	15.78	15.82
Montana	4.24	4.86	4.89	5.27	7.03	8.25	9.81	12.22	13.15	13.99
Nevada	1.61	1.09	1.09	1.19	1.19	1.09	1.09	1.26	2.30	2.22
New Mexico	1.42	1.47	1.93	1.96	2.85	2.84	6.17	7.13	8.32	9.21
Oregon	5.18	5.48	6.10	6.76	7.46	7.33	9.43	10.88	11.89	13.99
Utah	4.63	4.87	4.87	7.74	10.37	11.61	11.61	11.82	15.02	18.25
Washington	9.14	13.12	14.07	14.49	18.94	20.68	22.05	27.35	29.19	31.96
Wyoming	.76	.76	.81	.81	2.27	3.30	3.30	3.22	4.13	4.43
Total	65.56	74.76	86.73	96.77	114.76	127.48	147.49	173.47	193.30	215.08

[1/] See page 38 for definition.

Table 9.--Cable capacity of western ski areas, by State and ski season, 1955-65

(In million vertical transport feet per hour)[1/]

State	Ski season									
	1955-1956	1956-1957	1957-1958	1958-1959	1959-1960	1960-1961	1961-1962	1962-1963	1963-1964	1964-1965
Alaska	--	--	--	--	0.35	2.29	2.29	2.29	2.29	2.29
Arizona	--	--	0.13	0.13	.13	.13	.13	1.28	1.72	1.76
California	14.84	16.19	19.23	21.47	24.04	25.68	31.85	36.38	39.84	47.12
Colorado	6.59	9.46	12.97	15.87	17.32	19.91	23.70	33.35	37.63	41.48
Idaho	2.66	2.66	5.61	5.86	6.95	7.80	9.54	10.06	11.89	12.33
Montana	1.19	1.46	1.46	1.84	3.51	4.60	5.99	7.91	8.84	9.84
Nevada	1.17	.80	.80	.80	.80	.80	.80	.80	1.93	2.05
New Mexico	1.02	1.08	1.46	1.46	2.39	2.44	5.77	6.74	7.93	8.85
Oregon	2.14	2.14	2.55	2.90	4.11	4.11	5.73	6.90	7.73	10.20
Utah	4.12	4.19	4.20	7.04	9.40	10.32	10.88	11.24	14.49	17.72
Washington	4.00	7.09	7.09	7.09	10.45	11.17	12.23	16.63	18.42	22.18
Wyoming	.09	.09	.14	.14	1.60	2.63	2.63	2.63	3.23	3.53
Total	37.82	45.16	55.64	64.60	81.05	91.88	111.54	136.21	155.94	179.35

[1/] See page 38 for definition.

Table 10.--Number of ski areas in the 12 Western States equipped with both rope and cable tows and those with rope tows only, 1955-64

Ski seasons	Cable[1/]	Rope only	Total
1955-1956	67	85	152
1956-1957	72	84	156
1957-1958	82	78	160
1958-1959	90	79	169
1959-1960	106	77	183
1960-1961	114	74	188
1961-1962	129	70	199
1962-1963	131	64	195
1963-1964	145	52	197

[1/] All of these areas have cable facilities; some of these also have rope tow facilities.

Table 11.--Number and total cable capacity of cable areas operating in the Western States during the 1963-64 season by size class and by State

State	Cable tows (rated in VTF/hr.)[1/]									
	Less than 300,000		300,000 to 699,999		700,000 to 1,499,999		1,500,000 and over		Total	
	No. of areas	Total capacity	No. of areas	Total capacity	No. of areas	Total capacity	No. of areas	Total capacity	No. of areas	Total capacity
Alaska	--	--	2	830,000	1	1,460,000	--	--	3	2,290,000
Arizona	1	90,000	1	440,000	1	1,188,000	--	--	3	1,718,000
California	10	1,428,200	5	2,622,300	9	9,099,200	9	26,690,100	33	39,839,800
Colorado	6	1,236,000	6	2,652,520	6	5,475,100	8	28,269,235	26	37,632,855
Idaho	4	904,000	8	3,207,950	3	3,451,600	2	4,328,372	17	11,891,922
Montana	8	1,205,800	2	1,123,000	3	3,357,422	2	3,147,680	15	8,833,902
Nevada	1	120,000	--	--	--	--	1	1,813,500	2	1,933,500
New Mexico	1	104,880	2	904,400	2	1,734,650	3	5,181,800	8	7,925,730
Oregon	1	60,000	5	2,141,700	5	5,529,950	--	--	11	7,731,650
Utah	1	280,000	1	600,000	2	2,259,500	5	11,352,250	9	14,491,750
Washington	1	270,000	2	887,500	2	1,898,400	6	15,364,500	11	18,420,400
Wyoming	1	143,840	5	2,222,400	1	864,050	--	--	7	3,230,290
Total	35	5,842,720	39	17,631,770	35	36,317,872	36	96,147,437	145	155,939,799

[1/] See page 38 for definition.

Table 12.--Proportion of western ski areas that provided night skiing during the 1963-64 season

State	Ski areas providing night skiing	Total ski areas	Percent of total areas
	-Number-		
Alaska	0	7	0
Arizona	1	3	33
California	3	46	7
Colorado	5	28	18
Idaho	4	20	20
Montana	5	20	25
Nevada	1	4	25
New Mexico	1	8	12
Oregon	5	17	29
Utah	5	14	36
Washington	7	19	37
Wyoming	0	11	0
All States	37	197	19

Table 13.--Percentage increase and average annual compound rate of increase in skier attendance by States, 1955-64

State	Increase in skier attendance	Average annual compound rate of increase
Alaska	546	26.26
Arizona	401	22.31
California	149	12.10
Colorado	264	17.51
Idaho	146	12.92
Montana	215	15.43
Nevada	152	12.25
New Mexico	746	30.59
Oregon	406	22.47
Utah	182	13.81
Washington	264	17.52
Wyoming	278	18.07
All States	215	15.43

Table 14.--Projected number of visits to western ski areas in 1976, based upon past attendance and past and projected changes in population, per capita disposable income, and leisure time

Year[1]	Attendance (western ski areas)	Population (Western States)	Per capita disposable income (U.S.)	Leisure time per worker, (U.S.)
	Thousands of visits	Millions	Thousands of dollars[2]	Hours per week
1955	1,353	23.5	1.84	22.3
1956	1,460	24.4	1.89	22.4
1957	1,735	25.3	1.90	23.0
1958	1,826	26.1	1.89	23.0
1959	2,180	26.9	1.94	23.1
1960	2,477	27.6	1.96	23.1
1961	3,114	28.6	1.97	23.4
1963	4,265	30.4	2.06	23.6
1976	12,144	40.3	3.12	26.6

[1] 1962 data were not used in this projection because that year was considered atypical because of abnormally low snowfall conditions.

[2] Constant 1960 dollars.

Table 15.--Capacity of additional lifts and tows planned for construction in the Western States during the years 1966 through 1970

(In millions of VTF/hr.)[1]

Year	At existing areas[2]	At new areas	Total
1966	61.7	5.1	66.8
1967	15.6	4.7	20.3
1968	6.7	.8	7.5
1969	6.7	.9	7.6
1970	6.1	--	6.1
Total	96.8	11.5	108.3

[1] See page 38 for definition.

[2] Based upon answers given by operators to question 13 on questionnaire, copy of which is found beginning on page 30.

Table 16.--Comparison between actual visits and maximum potential visits to western ski areas for 1963-64 season during weekend-holiday period and other weekday period of use

Period of use	Actual no. of visits[1]	Potential no. of visits[2]	Percent of capacity used
	CABLE FACILITIES		
Weekends and holidays	2,687,065	2,923,860	92
Other weekdays	1,151,600	4,873,100	24
Total	3,838,665	7,796,960	
	ROPE FACILITIES		
Weekends and holidays	298,563	700,500	43
Other weekdays	127,955	1,167,500	11
Total	426,518	1,868,000	
All facilities	4,265,183	9,664,960	44

[1] Recorded total attendance (4,265,183) was proportioned between cable and rope as follows: 90 percent (3,838,665) using cable facilities and 10 percent (426,518) using rope facilities. The attendance for both cable and rope facilities was further proportioned as follows: 70 percent on weekends and holidays, 30 percent on other days.

[2] Maximum theoretical use per day was calculated by dividing VTF available per 5-hour day by an assumed average daily use of 8,000 VTF per skier. A 30-day weekend and holiday period and a 50-day midweek period were assumed for the season.

Table 17.--Employment and wages by size class of western ski area, 1963-64

Size class	Employment (man-days per week)	Annual wages	
		Total	Average per ski area
Rope	1,100	$55,859	$1,117
Less than 300,000 VTF/hr.[1/]	845	222,726	6,363
300,000 to 699,999 VTF/hr.	2,168	344,008	9,053
700,000 to 1,499,999 VTF/hr.	2,288	1,070,535	30,587
1,500,000 VTF/hr. and up	8,613	4,328,677	120,241
Total, all areas	15,014	$6,021,805	$ 31,040

[1/] See page 38 for definition.

Table 18.--Number and theoretical capacity of undeveloped sites that have been identified as potential ski areas, by State, 1965

State	Number of potential areas	Estimated theoretical capacity[1/]
		VTF/hr.[2/]
Alaska	2	3,250,000
Arizona	11	16,725,000
California	12	19,500,000
Colorado	16	26,000,000
Idaho	21	30,675,000
Montana	10	16,250,000
Nevada	5	8,125,000
New Mexico	5	8,125,000
Oregon	41	44,775,000
Utah	14	20,450,000
Washington	24	34,400,000
Wyoming	5	8,125,000
All States	166	236,400,000

[1/] Sites smaller than 100 acres were assumed capable of supporting 475,000 VTF/hr. Sites larger than 100 acres were assigned 1,625,000 VTF/hr.

[2/] See page 38 for definition.

Table 19.--Factors tending to inhibit growth in attendance by size class of ski area[1/]

Factor	Size class[2/]					Total
	Rope tow only	Cable tows (rated in VTF/hr.)				
		Less than 300,000	300,000 to 699,999	700,000 to 1,499,999	1,500,000 and over	
	Number[3/]					
1. Inadequate base service facilities	7	12	19	17	27	82
2. Climate, lack of snow	11	13	10	10	9	53
3. Poor roads, maintenance	12	2	4	11	6	35
4. Inadequate lift capacity	11	7	9	3	5	35
5. Inadequate skiing terrain or area	5	7	13	3	5	33
6. Distance from skier residence	9	5	6	3	4	27
7. Competition from other ski areas	7	3	4	3	5	22
8. Lack of capital for expansion or improvement	1	1	4	5	1	12
9. Inadequate advertising budget	0	2	1	0	1	4
10. Miscellaneous	6	6	1	5	10	28

[1/] Factors are those noted by 159 ski operators in response to question 15 in the Ski Area Operator Questionnaire. Some operators did not identify any problem for their areas.

[2/] Ski areas with cable facilities are rated on the basis of vertical transport feet per hour (VTF/hr.), as defined on page 38. Rope tow areas are not so rated.

[3/] Number of operators who noted the factor.

Table 20.--Profile of western ski areas by capacity size classes showing average values of selected characteristics, 1964-65[1/]

Characteristics		Rope tow only	Cable tows (rated in VTF/hr.)[2/]			
			Less than 300,000	300,000 to 699,999	700,000 to 1,499,999	1,500,000 and up
Attendance:						
Weekend and holiday	(visits)	3,258	4,729	10,146	23,190	46,776
Weekday	(visits)	367	921	1,136	7,368	26,795
Total	(visits)	3,625	5,811	11,282	30,558	73,571
Total capacity	(VTF/hr.)	NA	174,828	454,294	1,025,613	2,745,470
Skiable area	(acres)	29	71	112	266	592
Trails and runs	(acres)	11	26	43	101	194
Vertical rise	(feet)	383	638	881	1,375	1,952
Season length	(days)	105	108	127	130	149
Snow depth	(inches)	37	34	43	48	47
Acres per skier per day	(acres)	.19	.28	.35	.46	.38
Advertising budget	(dollars)	158	727	718	4,337	14,179
Trails and runs	(number)	3	5	6	9	17
Day ticket cost	(dollars)	1.64	2.90	3.28	4.06	4.96
Restaurant capacity[3/]	(seats)	29	38	71	171	426
Lodging capacity[3/]	(beds)	2	6	9	81	209
Parking capacity	(cars)	117	182	206	534	696
Free ski school enrollment	(number)	49	75	63	136	285
Certified ski instructors	(number)	.45	2	3	6	21
Provide other activities[4/]	(number)	.7	.9	.7	1	1
Competing capacity[5/]	(VTF/hr.)	2,679,688	2,633,724	2,165,500	1,025,867	3,302,200
Tributary population[6/]	(number)	64,414	115,932	391,290	170,320	524,860
Trib. population w/$7,500 income[7/]	(number)	5,799	10,720	49,189	15,724	81,915
Dist. to nearest metropolitan area[8/]	(miles)	157	132	141	119	96
College enrollment within 1-hr. drive	(number)	4,020	23,158	15,720	25,295	19,921
Population of major market[9/]	(number)	204,998	1,063,487	715,872	1,008,380	1,689,362
Basis: areas sampled	(number)	34	28	34	30	33

1/ This table is based on a sample of 159 ski areas rather than the 197 reported on elsewhere in this publication, but 86 percent of the cable areas are included in the sample. Therefore, certain data do not correspond exactly with data that might be derived from other tables. Attendance data is for the 1963-64 season.

2/ Ski areas with cable facilities are rated on the basis of vertical transport feet per hour (VTF/hr.) as defined on page 38. Rope tow areas are not so rated.

3/ Includes only facilities within walking distance of lifts and tows.

4/ Includes principally skating, sledding, tobogganing, dancing, swimming, and summer lift rides, all within walking distance of lifts and tows.

5/ Of other cable areas within a 1-hour drive.

6/ Population (1960 Census) within a 1-hour drive.

7/ Population with annual income of at least $7,500 (1960 Census) within a 1-hour drive.

8/ Cities and/or counties listed as metropolitan areas by Bureau of Census in 1960 Census.

9/ Of principal cities, towns, and/or metropolitan areas that operators identified as the major source of attendance.

Table 21.--Percent of total visits made to ski areas in each Western State during the 1963-64 season by residency class of skiers

State	Residents	Nonresidents		All residency classes
		Other Western States	Elsewhere	
Alaska	96	2	2	100
Arizona	95	5	--	100
California	98	2	--	100
Colorado	75	8	17	100
Idaho	71	25	4	100
Montana	88	8	4	100
Nevada	63	37	0	100
New Mexico	70	3	27	100
Oregon	79	20	1	100
Utah	90	9	1	100
Washington	93	2	5	100
Wyoming	92	5	3	100
All States	87	7	6	100

Table 22.--Distribution of skier visits by age class and State of residence, 1964-65 season

(In percent)

State	Age class						Not known 1/	Total
	13-18	19-22	23-30	31-40	41-50	Over 50		
Alaska	39	4	16	34	5	2	0	100
Arizona	39	13	27	10	9	2	0	100
California	18	15	29	23	13	2	0	100
Colorado	20	17	28	23	10	2	<0.5	100
Idaho	31	9	26	25	7	2	<0.5	100
Montana	18	6	34	31	9	2	0	100
Nevada	32	6	41	14	3	4	0	100
New Mexico	24	4	27	33	12	<0.5	0	100
Oregon	40	10	13	14	19	3	1	100
Utah	48	11	15	17	8	1	<0.5	100
Washington	27	12	23	23	11	4	0	100
Wyoming	38	16	21	18	2	5	<0.5	100
Other States	6	6	33	38	15	2	0	100
All States	25	13	25	23	11	2	<0.5	100

1/ Respondents failed to answer question 4 of questionnaire, copy of which is found beginning on page 49.

Table 23.--Distribution of resident skiers of 12 Western States who visited ski areas in these States during the 1964-65 season, according to distance traveled by auto and type of trip

(In percent)

Distance (miles)	Type of trip			All types of trips
	Single day[1]	Weekend[2]	Vacation[3]	
0-25	19	1	1	9
26-50	25	7	2	15
51-100	42	29	10	32
101-150	9	22	13	14
151-200	4	16	14	10
201-250	1	10	13	6
251-300	<0.5	6	9	4
301-350	<0.5	6	8	3
351-400	<0.5	2	6	2
401-500	<0.5	1	7	2
501-1,000	--	<0.5	13	2
1,001+	--	<0.5	4	1

[1] Returned home each day.

[2] Stayed away from home at least one night but not more than three nights.

[3] Stayed away from home four or more nights.

Table 24.--Distribution of nonwestern skiers who visited western ski areas during the 1964-65 season, according to distance traveled by auto and type of trip

(In percent)

Distance (miles)	Type of trip			All types of trips
	Single day[1]	Weekend[2]	Vacation[3]	
0-25	23			7
26-50	27	3	<0.5	9
51-100	28	15	3	14
101-150	15	13	8	12
151-200	5	13	3	6
201-250	2	22	6	9
251-300		16	3	6
301-350		4	3	2
351-400		6	5	4
401-500		4	5	3
501-1,000		4	50	22
1,001+			14	6

[1] Returned home each day.

[2] Stayed away from home at least one but not more than three nights.

[3] Stayed away from home four or more nights.

Table 25.--Average distance of auto travel by residents of 12 Western States, who skied in western ski areas during the 1964-65 season

State of residence	Average distance to ski area
	Miles
Alaska	34
Arizona	238
California	198
Colorado	96
Idaho	78
Montana	106
Nevada	124
New Mexico	118
Oregon	107
Utah	74
Washington	122
Wyoming	133
All States	139

Table 26.--Average daily expenditures for specified items by skiers visiting western ski areas during the 1964-65 season according to type of trip

Item	Single day[1]	Weekend[2]	Vacation[3]	All types of trips
Lodging and meals	$1.48	$8.37	$18.72	$5.73
Lift tickets	3.96	5.09	8.44	4.89
Rental or repair	.82	1.07	1.10	.90
Ski lessons	.54	.50	1.36	.66
Other entertainment	.82	3.48	6.14	2.26
Equipment purchased at destination	.78	1.04	3.51	1.25
Transportation	2.48	3.95	9.18	3.84
Package plan[4]	.08	1.24	3.99	.95
Miscellaneous	.08	.10	--	.06
Total	11.04	24.84	52.44	20.54

[1] Returned home each day.

[2] Stayed away from home for at least one night but not more than three nights.

[3] Stayed away from home four or more nights.

[4] Many skiers, especially those on vacation trips, were not asked to itemize expenditures when they had paid for their trip on a "package plan" basis.

Table 27.--Itemized expenditures on ski trips during 1963-64 season in western ski areas by State in which expenditure was made

(Thousands of dollars)

State	Item									
	Lodging & meals	Lift tickets	Rental or repair	Ski schools	After-ski activities	Equipment	Transportation	Package plan trips 1/	Other	Total
Alaska	203	172	32	23	80	45	135	33	2	725
Arizona	52	44	8	6	20	11	35	9	1	186
California	9,829	8,348	1,547	1,096	3,848	2,153	6,559	1,609	121	35,110
Colorado	6,582	5,590	1,036	734	2,576	1,441	4,392	1,077	82	23,510
Idaho	1,594	1,354	251	178	624	349	1,064	261	19	5,694
Montana	547	465	86	61	214	120	365	89	7	1,954
Nevada	156	133	24	17	61	34	104	26	2	557
New Mexico	668	568	105	75	262	146	446	109	8	2,387
Oregon	1,406	1,194	222	157	550	308	938	230	17	5,022
Utah	1,176	999	185	131	460	258	785	192	14	4,200
Washington	2,347	1,993	369	262	919	514	1,565	384	29	8,382
Wyoming	193	164	31	21	76	42	129	32	2	690
All States	24,753	21,024	3,896	2,761	9,690	5,421	16,517	4,051	304	88,417

1/ Some skiers, especially those taking vacation trips, used the "package plan" basis. They were not asked to separate the various items included in the price.

Table 28.--Average daily expenditure of skiers on single-day trips 1/ to western ski areas during the 1964-65 season by State and residency class

(In dollars)

State	Resident	Nonresident		Average
		Western	Other	
Alaska	15.89	(2/)	(2/)	15.45
Arizona	12.02	(2/)	(2/)	11.87
California	14.42	11.00	(2/)	14.34
Colorado	13.18	10.19	(2/)	13.12
Idaho	7.51	12.49	(2/)	7.79
Montana	7.72	(2/)	(2/)	7.74
Nevada	9.22	12.79	(2/)	9.57
New Mexico	9.84	(2/)	(2/)	10.12
Oregon	10.57	10.23	(2/)	10.51
Utah	7.74	11.63	(2/)	7.82
Washington	9.95	12.28	10.16	9.98
Wyoming	8.18	11.54	(2/)	8.47
All States	--	--	--	11.04

1/ Returned home at the end of each day.

2/ No average given for a sample size of less than 15 skiers.

Table 29.--Average daily expenditures of skiers on weekend trips[1/] to western ski areas during the 1964-65 season by State and residency class

(In dollars)

State	Resident	Nonresident		Average
		Western	Other	
Alaska	(2/)	(2/)	(2/)	(2/)
Arizona	27.36	(2/)	(2/)	27.32
California	27.36	31.60	(2/)	27.45
Colorado	19.99	27.06	46.47	22.85
Idaho	23.14	23.20	(2/)	24.82
Montana	20.00	20.64	(2/)	20.04
Nevada	11.99	31.29	(2/)	29.91
New Mexico	25.89	(2/)	39.88	32.46
Oregon	16.03	20.96	(2/)	17.23
Utah	29.31	23.29	(2/)	26.73
Washington	13.76	18.27	18.29	14.54
Wyoming	20.58	38.02	(2/)	25.47
All States	--	--	--	24.84

1/ Stayed away from home one but not more than three nights.

2/ No average given for a sample size of less than 15 skiers.

Table 30.--Average daily expenditures of skiers on vacation trips[1/] to western ski areas during the 1964-65 season by State and residency class

(In dollars)

State	Resident	Nonresident		Average
		Western	Other	
Alaska	(2/)	(2/)	(2/)	(2/)
Arizona	(2/)	(2/)	(2/)	34.72
California	51.95	33.55	(2/)	51.48
Colorado	30.10	61.98	62.72	56.57
Idaho	35.36	45.11	(2/)	50.48
Montana	46.58	44.43	(2/)	41.85
Nevada	(2/)	54.20	(2/)	54.00
New Mexico	28.23	(2/)	44.38	42.55
Oregon	34.69	42.16	(2/)	38.88
Utah	48.52	52.53	(2/)	59.48
Washington	23.88	39.54	(2/)	26.32
Wyoming	63.95	(2/)	(2/)	55.77
All States	--	--	--	52.44

1/ Stayed away from home at least four nights.

2/ No average given for a sample size of less than 15 skiers.

Table 31.--Average daily expenditures of skiers who visited western ski areas during the 1964-65 season by State and residency class[1/]

(In dollars)

State	Resident	Nonresident		Average
		Western	Other	
Alaska	15.62	(2/)	(2/)	15.23
Arizona	17.98	(2/)	(2/)	18.16
California	27.40	25.75	(2/)	27.44
Colorado	15.42	48.36	60.27	25.84
Idaho	9.14	37.38	71.60	18.92
Montana	9.28	32.93	(2/)	11.75
Nevada	9.48	31.03	(2/)	17.28
New Mexico	13.67	33.95	39.20	21.12
Oregon	12.23	18.68	(2/)	13.58
Utah	8.66	35.96	(2/)	11.98
Washington	10.86	20.60	14.75	11.22
Wyoming	9.81	27.39	(2/)	10.92
All States	--	--	--	20.54

1/ Based on total expenditures by skiers on all types of trips. For similar averages, see tables 28, 29, and 30.

2/ No average given for a sample size of less than 15 skiers.

Table 32.--Total trip expenditures of skiers who visited western ski areas during the 1963-64 season by family income class and by type of trip

Family income class	Single day[1/]	Weekend[2/]	Vacation[3/]	Total
	MILLIONS OF DOLLARS			
Under $4,000	1.6	1.5	1.3	4.4
$4,000-$6,499	3.4	3.1	1.8	8.3
$6,500-$9,999	5.6	5.8	5.4	16.8
$10,000-$14,999	4.8	6.0	7.3	18.1
$15,000-$24,999	2.4	3.6	6.1	12.1
$25,000 and over	1.1	2.2	8.2	11.5
Not known[4/]	9.5	3.6	4.1	17.2
Total	28.4	25.8	34.2	88.4
	PERCENT[5/]			
Under $4,000	37	33	30	100
$4,000-$6,499	40	38	22	100
$6,500-$9,999	33	35	32	100
$10,000-$14,999	27	33	40	100
$15,000-$24,999	20	30	50	100
$25,000 and over	10	19	71	100
Not known[4/]	55	21	24	100
Average	32	29	39	100

1/ Returned home at end of each day.

2/ Stayed away from home at least one night but not more than three.

3/ Stayed away from home four or more nights.

4/ Respondents did not answer or were not asked to answer question 5 of questionnaire, copy of which is found beginning on page 49.

5/ Percent of spending on all types of trips within each family income class.

Table 33.--Annual expenditures on clothes and equipment by skiers who are residents of the 12 Western States, 1963-64 season[1/]

State	Percent of skiers who made purchases	Average expenditure per skier [2/]	Total expenditures
Alaska	91	$154.58	$376,008
Arizona	40	102.71	72,581
California	78	84.26	10,221,113
Colorado	81	78.19	3,833,879
Idaho	77	98.05	1,403,904
Montana	67	113.22	911,565
Nevada	92	120.50	221,476
New Mexico	71	104.56	533,263
Oregon	86	103.64	2,466,655
Utah	79	80.32	1,790,573
Washington	82	74.07	4,324,712
Wyoming	75	100.99	582,163
All States	79	$85.42	$26,737,892

[1/] Does not include $5.4 million spent on clothing and equipment on ski trips (see table 27).

[2/] Average calculated only for those skiers who made purchases.

Table 34.--Number of skiers, by State, who visited western ski areas during the 1963-64 season, grouped into three residency classes

State	Residents	Nonresidents		All residency classes
		Other Western States:	Elsewhere	
Alaska	2,659	545	545	3,749
Arizona	1,754	333	24	2,111
California	155,904	5,803	1,827	163,534
Colorado	60,391	11,836	19,847	92,074
Idaho	18,530	13,416	3,351	35,297
Montana	12,030	4,072	501	16,603
Nevada	1,993	4,284	0	6,277
New Mexico	7,182	949	7,153	15,284
Oregon	27,601	12,523	545	40,669
Utah	28,080	5,948	753	34,781
Washington	71,405	5,546	5,459	82,410
Wyoming	7,727	1,224	718	9,669
Total	395,256	(1/)	(1/)	(1/)

[1/] Totals are not presented because many skiers ski in several States and thus would be counted more than once.

Table 35.--Proportion of total population that skied during the 1963-64 season for each of the 12 Western States

State of residence	Skier population	Total population	Percent of total population
	Number		
Alaska	2,659	246,000	1.1
Arizona	1,754	1,516,000	.1
California	155,904	17,539,000	.9
Colorado	60,391	1,918,000	3.1
Idaho	18,530	687,000	2.7
Montana	12,030	701,000	1.7
Nevada	1,993	389,000	.5
New Mexico	7,182	986,000	.7
Oregon	27,601	1,852,000	1.5
Utah	28,080	971,000	2.9
Washington	71,405	2,961,000	2.4
Wyoming	7,727	339,000	2.3
Total	395,256	30,105,000	1.3

Table 36.--Educational background of skiers who visited western ski areas during the 1964-65 season, by State of residence

(In percent)

State of residence	Years				Not known 1/	Total
	1-8	9-12	13-16	17+		
Alaska	4	38	20	38	0	100
Arizona	--	42	28	30	0	100
California	2	22	54	21	1	100
Colorado	3	28	50	19	<0.5	100
Idaho	9	42	38	11	<0.5	100
Montana	11	23	56	8	2	100
Nevada	7	31	37	25	0	100
New Mexico	9	20	52	19	0	100
Oregon	8	44	37	11	<0.5	100
Utah	12	45	33	9	1	100
Washington	7	32	43	18	<0.5	100
Wyoming	8	45	41	6	<0.5	100
All States	5	29	47	18	1	100

1/ Respondents did not answer question 17 of questionnaire, copy of which is found beginning on page 49.

Table 37.--Age classification of skiers who visited western ski areas during the 1964-65 season, by State of residence

(In percent)

State of residence	13-18	19-22	23-30	31-40	41-50	Over 50	Not known 1/	Total
Alaska	54	1	11	31	2	1	0	100
Arizona	30	13	42	8	7	<0.5	0	100
California	16	9	39	27	9	<0.5	0	100
Colorado	20	15	33	27	5	<0.5	0	100
Idaho	52	1	19	24	4	<0.5	0	100
Montana	21	2	33	39	5	<0.5	0	100
Nevada	39	2	50	8	0	1	0	100
New Mexico	29	1	27	35	8	0	0	100
Oregon	59	5	9	14	12	1	<0.5	100
Utah	70	4	10	12	4	<0.5	0	100
Washington	36	7	25	26	6	<0.5	0	100
Wyoming	61	6	18	13	1	1	<0.5	100
Other states	1	1	34	54	10	<0.5	0	100
All States	29	8	30	26	7	<0.5	<0.5	100

1/ Respondents did not answer question 4 of questionnaire, copy of which is found beginning on page 49.

Table 38.--Family income class of skiers who visited western ski areas during the 1964-65 season, by State of residence

(In percent)

State	Less than $4,000	$4,000 to 6,499	$6,500 to 9,999	$10,000 to 14,999	$15,000 to 24,999	$25,000 and over	Not known 1/	Total
Alaska	0	0	14	21	56	9	0	100
Arizona	11	10	32	44	0	2	1	100
California	9	13	27	26	15	7	3	100
Colorado	8	20	29	24	10	5	4	100
Idaho	<0.5	22	49	18	7	3	1	100
Montana	3	28	33	16	17	3	<0.5	100
Nevada	23	6	18	29	20	2	2	100
New Mexico	2	11	27	28	22	10	<0.5	100
Oregon	10	10	31	21	22	5	1	100
Utah	6	17	40	21	9	3	4	100
Washington	7	20	23	31	12	4	3	100
Wyoming	9	18	36	15	16	6	<0.5	100
All States	7	16	29	25	14	6	3	100

1/ Respondents failed to answer question 5 on questionnaire, copy of which is found beginning on page 49.

Table 39.--Average number of visits to western ski areas per skier during the 1964-65 season, by State and by residency class

State	Residents	Nonresidents		All residency classes
		Other Western States	Elsewhere	
Alaska	16.5	2.0	2.0	12.2
Arizona	5.4	1.5	1.0	4.7
California	7.7	3.8	3.3	7.6
Colorado	11.0	5.5	7.7	9.6
Idaho	11.2	5.4	3.4	8.3
Montana	11.8	3.2	11.1	9.7
Nevada	9.9	2.7	0	5.0
New Mexico	10.7	3.2	4.1	7.2
Oregon	10.3	5.7	3.6	8.8
Utah	10.9	4.8	5.8	9.8
Washington	9.4	2.3	6.3	8.8
Wyoming	7.3	2.7	2.1	6.4
All States	10.27	(1/)	(1/)	(1/)

1/ Averages are not presented because many skiers ski in several States and thus would be counted more than once.

Table 40.--Percent of married skiers, 19 years or older, who visited western ski areas during the 1964-65 season, whose spouse was classed as a "skier"-- by family income class and sex

Family income class	Sex	
	Male	Female
Under $4,000	65	100
$4,000 to $6,499	62	87
$6,500 to $9,999	70	81
$10,000 to $14,999	73	93
$15,000 to $24,999	73	77
$25,000 and over	73	57
Not known1/	47	81
All income classes	70	84

1/ Respondents did not answer question 5 of questionnaire, copy of which is found beginning on page 49.

Table 41.--Distribution within family income classes of those (19 years or older) who skied during the 1964-65 season, according to type of ski trip

Income class	Single day only[1]	Weekend only[2]	Vacation only[3]	Single day and weekend	Single day and vacation	Weekend and vacation	Single day, weekend, and vacation	Total
	Percent							
Under $4,000	43.2	24.4	1.1	17.9	2.1	3.8	7.5	100.0
$4,000 to $6,499	50.3	14.9	.8	21.0	2.3	3.1	7.6	100.0
$6,500 to $9,999	47.4	13.4	1.0	24.9	4.1	2.8	6.4	100.0
$10,000 to $14,999	38.1	14.7	3.0	24.8	5.4	5.8	8.2	100.0
$15,000 to $24,999	34.3	16.5	2.3	22.4	6.8	7.2	10.5	100.0
$25,000 and over	19.9	12.4	8.0	19.7	7.1	12.1	20.8	100.0
All income classes	46.0	12.8	2.0	22.8	4.3	4.5	7.6	100.0

[1] Returned home each day

[2] Stayed away from home at least one night but not more than three nights.

[3] Stayed away from home four or more nights.

Table 42.--Average number of days skied during the 1964-65 season per skier on each of three types of trips and for all trips combined, by family income class[1]

Income class	Single day[2]	Weekend[3]	Vacation[4]	All types of trips
Under $4,000	8.02	4.54	7.76	9.65
$4,000-$6,499	7.24	5.16	6.64	9.63
$6,500-$9,999	6.70	4.86	7.05	9.69
$10,000-$14,999	7.41	4.95	6.42	10.38
$15,000-$24,999	6.72	5.38	7.55	10.59
$25,000 and over	6.44	5.11	8.51	13.82
Not known[5]	8.47	4.60	7.07	10.37
All income classes	7.45	4.92	7.16	10.27

[1] Averages based on the number of days spent skiing on each of the three types of trips by skiers who went on such trips. Not all skiers went on all three kinds of trips.

[2] Returned home each day.

[3] Stayed away from home at least one night, but not more than three nights.

[4] Stayed away from home four or more nights.

[5] Respondents did not answer question 5 of questionnaire, copy of which is found beginning on page 49.

Table 43.--Occupational backgrounds of skiers who visited western ski areas during the 1964-65 season, by State of residence

(In percent)

State	Student	Professional	Clerical	Managerial	Housewife	All others	Not known 1/	Total
Alaska	45	35	0	8	7	5	0	100
Arizona	59	18	0	9	1	13	0	100
California	33	25	5	3	8	25	1	100
Colorado	35	25	3	5	10	19	3	100
Idaho	33	18	2	2	6	38	1	100
Montana	28	39	3	5	4	20	1	100
Nevada	54	20	1	3	3	19	0	100
New Mexico	27	35	2	3	9	24	0	100
Oregon	50	15	1	5	13	16	0	100
Utah	57	11	4	2	5	19	2	100
Washington	37	19	4	6	12	22	<0.5	100
Wyoming	48	9	3	7	13	20	<0.5	100
All States	37	22	4	4	9	23	1	100

1/ Respondents failed to answer question 19 on questionnaire, copy of which is found beginning on page 49.

Table 44.--Marital status and sex of skiers 19 years or older who visited western areas during the 1964-65 season, by State of residence

(In percent)

State	Married			Not married			Total
	Male	Female	Total	Male	Female	Total	
Alaska	57	14	71	22	7	29	100
Arizona	35	4	39	46	15	61	100
California	45	12	57	31	12	43	100
Colorado	42	15	57	27	16	43	100
Idaho	52	16	68	21	11	32	100
Montana	52	20	72	19	9	28	100
Nevada	40	12	52	45	3	48	100
New Mexico	56	15	71	18	11	29	100
Oregon	50	16	66	20	14	34	100
Utah	49	18	67	17	16	33	100
Washington	47	20	67	19	14	33	100
Wyoming	48	27	75	16	9	25	100
Others	51	11	62	27	11	38	100
All States	47	15	62	25	13	38	100

Table 45.--Percent of skiers taking various types of trips or combinations of such trips to western ski areas during the 1964-65 season by State of residence

State of residence	Single day only[1]	Weekend only[2]	Vacation only[3]	Single day and weekend	Single day and vacation	Weekend and vacation	Single day, weekend, and vacation	Total
Alaska	78.8	0	0	18.9	1.3	0	1.0	100.0
Arizona	52.2	3.7	17.3	13.0	1.7	1.5	10.6	100.0
California	23.1	27.3	2.3	25.2	3.3	9.3	9.5	100.0
Colorado	57.5	.8	.3	29.4	4.8	.3	6.9	100.0
Idaho	62.4	10.8	0	22.4	2.4	.2	1.8	100.0
Montana	75.8	0	0	13.0	6.9	.5	3.8	100.0
Nevada	53.7	14.2	0	20.1	5.7	0	6.3	100.0
New Mexico	40.7	9.2	0	38.8	3.2	1.6	6.5	100.0
Oregon	62.5	3.5	0	24.2	3.1	.5	6.2	100.0
Utah	88.5	.2	0	7.3	2.1	.2	1.7	100.0
Washington	62.2	1.8	1.7	21.7	5.5	.5	6.6	100.0
Wyoming	62.6	4.8	0	23.1	5.6	1.1	2.8	100.0
Other	5.1	20.7	14.2	10.7	11.7	16.4	21.2	100.0
All States	46.0	12.8	2.0	22.8	4.3	4.5	7.6	100.0

[1] Returned home at the end of the day.

[2] Stayed away from home at least one but not more than three nights.

[3] Stayed away from home four or more nights.

Table 46.--Average daily expenditure per skier on trips, by family income class and type of trip, 1964-65

Income class	Type of trip		
	Single day[1/]	Weekend-overnight[2/]	Vacation[3/]
	Dollars		
Under $4,000	11.76	23.79	40.89
$4,000-$6,499	11.29	25.93	36.14
$6,500-$9,999	10.65	26.18	47.37
$10,000-$14,999	10.17	25.78	50.39
$15,000-$24,999	10.91	25.95	56.17
Over $25,000	12.01	28.03	80.77
No answer[4/]	11.48	19.54	40.52
All income classes	11.04	24.84	52.44

1/ Returned to his home at end of each day of skiing.
2/ Stayed away from home on weekend ski trip for at least one night but less than four nights.
3/ Stayed away from home four or more nights while on vacation ski trip.
4/ Skiers who did not, or were not asked to, provide income information on Skier Questionnaire (question 5).

Table 47.--Percent of skier population that started to ski in each year since 1950

Years	Percent of skiers that started skiing in each year
1950 and earlier	21
1951	1
1952	2
1953	2
1954	2
1955	3
1956	3
1957	4
1958	4
1959	5
1960	8
1961	6
1962	8
1963	11
1964	20

LIST OF POSSIBLE SITES

The listing on the following pages gives the name, location, and other available information describing 166 areas that have been judged by someone as possible ski areas. Inclusion of any site does not in any way indicate that its development would be economically feasible.

LIST OF POSSIBLE SITES

ALASKA

Boot Hill, near Fairbanks, 100 acres

Steep Creek, 12 mi. N Juneau on Mendenhall Loop Rd., 1,200 acres, 4,000 ft.vert.rise

ARIZONA

Alpine Bowl, 5 mi. SW Alpine on US Hwy 180, 750 acres, 1,000 ft. vert. rise

Escudilla, 10 mi. N Alpine on St. Hwy 180, 700 acres, 1,100 ft. vert. rise

Greer, 2 mi. S Greer on St. Hwy 373, 300 acres, 500 ft. vert. rise

Hannagan, 25 mi. S Alpine on US Hwy 666, 2,000 acres, 1,000 ft. vert. rise

Hawley Lake, 18 mi. SE McNary on St. Hwy 73, 500 acres, 600 ft. vert. rise

Inner Basin, 18 mi. N Flagstaff on St. Hwy 89, 608 acres, 2,000 ft. vert. rise

Mount Baldy, 30 mi. SE McNary on St. Hwy 73, 1,000 acres, 2,500 ft. vert. rise

Mount Graham, 25 mi. SW Safford on St. Hwy 366, 800 acres, 1,500 ft. vert. rise

Mount Ord, 20 mi. E McNary on St. Hwy 73, 1,000 acres, 2,000 ft. vert. rise

Roof Butte, 7 mi. SW Lukachukai on St. Hwy 12, 300 acres, 900 ft. vert. rise

Springer Mtn., 1.5 mi. E Lakeside on St. Hwy 173, 4 acres, 600 ft. vert. rise

CALIFORNIA

Castle Peak, 6 mi. SW Soda Springs on US Hwy 40, 1,000 acres, 1,600 ft. vert. rise

Deer Creek, 11 mi. NE Chester on St. Hwy 36, 650 acres, 3,000 ft. vert. rise

Donderberg, 17 mi. N Bridgeport on US Hwy 395, 400 acres, 2,000 ft. vert. rise

Freel Peak, 8 mi. SE Lake Tahoe on US Hwy 50, 1,000 acres, 2,000 ft. vert. rise

Kirkwood, 35 mi. SW Lake Tahoe, St. Hwy 88, 800 acres, 1,200 ft. vert. rise

Mineral King, 31 mi. W Three Rivers on St. Hwy 198, 2,000 acres, 4,000 ft. vert. rise

Peppermint, 20 mi. NW Springville on St. Hwy 190, 700 acres, 1,600 ft. vert. rise

Round Top, 30 mi. S Lake Tahoe on St. Hwy 88, 400 acres, 1,200 ft. vert. rise

Silver Mtn., 14 mi. S Markleeville on St. Hwy 104, 800 acres, 2,500 ft. vert. rise

Sherwin Creek, 2 mi. N Mammoth Lakes on US Hwy 395, 1,600 acres, 2,800 ft. vert. rise

Stevens Peak, 12 mi. S Lake Tahoe on St. Hwy 89, 900 acres, 1,900 ft. vert. rise

Thimble Peak, 37 mi. SW Lake Tahoe on St. Hwy 88, 500 acres, 1,600 ft. vert. rise

COLORADO

Copper Mtn.,5 mi. SW Frisco on US Hwy 6, 1,000 acres, 2,000 ft. vert. rise

Cucharas, 26 mi. SW Walsenberg on St. Hwy 111, 160 acres, 1,800 ft. vert. rise

Devil's Creek, 6 mi. N Lake City on St. Hwy 149, 100 acres, 3,000 ft. vert. rise

Douglas Creek, 40 mi. S Rangely on St. Hwy 64, 200 acres, 1,200 ft. vert. rise

East Baldy Peak, 10 mi. N Ouray on St. Hwy 550, 100 acres, 2,400 ft. vert. rise

East Whitehouse, 6 mi. NW Ouray on St. Hwy 550, 100 acres, 2,000 ft. vert. rise

COLORADO (con.)

Iron Mtn., 10 mi. SW Gardner on St. Hwy 305, 3,000 acres, 2,500 ft. vert. rise

Keystone, 5 mi. E Dillon on US Hwy 6, 2,000 acres, 3,000 ft. vert. rise

Little Annie, 3 mi. SW Aspen on St. Hwy 82, 1,000 acres, 500 ft. vert. rise

Mary Jane, 2 mi. S Winter Park on US Hwy 40, 1,000 acres, 1,700 ft. vert. rise

Mt. Elbert, 8 mi. SW Leadville on US Hwy 24, 1,500 acres, 1,500 ft. vert. rise

Sandoval Basin, 25 mi. SW Pagosa Springs on St. Hwy 151, 200 acres, 1,100 ft.vert.rise

Sheep Mtn., 5 mi. SW Tabernash on US Hwy 40, 320 acres, 1,200 ft. vert. rise

Slumgullion, 7 mi. SE Lake City on St. Hwy 149, 100 acres

Snowmass, 5 mi. NW Aspen on St. Hwy 82, 6,000 acres, 4,000 ft. vert. rise

Waugh Mtn., 40 mi. NW Canon City on St. Hwy 9, 3,150 acres, 2,000 ft. vert. rise

IDAHO

Ajax Mtn., 15 mi. NE Salmon on St. Hwy 93, 154 acres, 3,000 ft. vert. rise

Baldy, 10 mi. E Swan Valley on US Hwy 26, 360 acres

Bannak Peak, 30 mi. SW Pocatello on St. Hwy 30, 300 acres, 500 ft. vert. rise

Bennett Mtn., 15 mi. NE Mountain Home on St. Hwy 68, <100 acres

Big Springs, 40 mi. N Ashton on St. Hwy 84, 130 acres

Bishop, 30 mi. NW Ashton on US Hwy 191, 140 acres

Butterfield Creek, 16 mi. N Ketchum on US Hwy 93, 800 acres, 2,800 ft. vert. rise

Capehorn Mtn., 23 mi. W Stanley on St. Hwy 21, 3,880 acres, 2,712 ft. vert. rise

Elk Mtn., 9 mi. W Stanley on St. Hwy 21, 950 acres, 1,300 ft. vert. rise

Frost Peak, 15 mi. SW Kellogg on St. Hwy 10, <100 acres

High Point, 20 mi. NW Ashton on US Hwy 191, 160 acres

Mt. Putnam , 30 mi. NE Pocatello on US Hwy 91, 400 acres, 1,000 ft. vert. rise.

No Business Mtn., 8 mi. W Donnelly on St. Hwy 15, 1,000 acres, 2,430 ft.vert.rise

Reed's Gulch, 11 mi. NE St. Maries on St. Hwy 95A, 1,920 acres, 1,103 ft.vert.rise

Sawtell, 40 mi. N Ashton on US Hwy 191, 600 acres

Signal Mtn., 10 mi. NE Spencer on US Hwy 91, 420 acres

Silver City, 22 mi. SW Murphy on St. Hwy 45, <100 acres, 1,000 ft. vert. rise

St. Joe-Baldy Mtn., 10 mi. E St. Maries on Alt.95 I-43, 3,000 acres

Warm River, 10 mi. NE Ashton on St. Hwy 47, 100 acres

West End, 30 mi. NW Ashton on US Hwy 191, 130 acres

Withington Creek, 16 mi. SE Salmon on St. Hwy 93, 200 acres, 2,000 ft. vert. rise

MONTANA

Blackfeet, 19 mi. SE Browning on US Hwy 89, 160 acres, 1,300 ft. vert. rise

Boulder, 16 mi. NE Polson on St. Hwy 35, 4,000 acres, 1,600 ft. vert. rise

Crazy Fish, 20 mi. N Missoula on US Hwy 10, 2,000 acres, 1,500 ft. vert. rise

Crystal Lake, 30 mi. S Lewistown on US Hwy 87, 460 acres, 1,000 ft. vert. rise

MONTANA (con.)

East Slope-Big Horn, 30 mi. E Wyola on US Hwy 87, 4,000 acres, 2,545 ft. vert. rise

Lolo Peak, 15 mi. SW Missoula on US Hwy 12, 4,000 acres, 3,500-5,000 ft. vert. rise

Lost Trail, 30 mi. S Darby on US Hwy 93, 1,500 acres, 2,900 ft. vert. rise

Mount Hebgen, 13 mi. NNW West Yellowstone on US Hwy 191, 1,500 acres, 2,000 ft.vert.rise

South Lookout Pass, 7 mi. SE Mullan on US Hwy 90, 1,200 acres, 1,900 ft. vert. rise

Squaw Peak, 26 mi. NW Missoula on US Hwy 10, 1,500 acres, 2,000 ft. vert. rise

NEVADA

Bald Mtn., 35 mi. SE Ely on US Hwys 6 & 50, 500 acres, 1,500 ft. vert. rise

East Peak, 10 mi. NW Minden on For. Hwy 19, 1,500 acres, 2,300 ft. vert. rise

Lamoille Canyon, 25 mi. SE Elko on US & St. Hwy 40, 300 acres, 1,000 ft. vert. rise

Mount Tobin, 54 mi. SSE Winnemucca on US Hwy 40, 5,000 acres, 5,100 ft. vert. rise

Spruce Mtn., 39 mi. S Wells on US Hwy 93, 15,000 acres, 3,700 ft. vert. rise

NEW MEXICO

Elk Mtn., 30 mi. NW Las Vegas on St. Hwy 65, 1,500 acres, 2,000 ft. vert. rise

Mount Taylor, 15 mi. NE Grants on US Hwy 40, 200 acres, 1,840 ft. vert. rise

Mt. Wheeler, 6 mi. S Red River on St. Hwy 38, 600 acres, 3,000 ft. vert. rise

Santa Clara Canyon, 15 mi. SW Espanola on St. Hwy 4, 640 acres, 1,800 ft. vert. rise

White Mtn., 10 mi. NW Ruidoso on St. Hwy 37, 1,280 acres, 2,400 ft. vert. rise

OREGON

Badger Butte, 35 mi. S Hood River on St. Hwy 35, 100 acres, 500 ft. vert. rise

Barlow Butte, 3 mi. E Govt. Camp on St. Hwy 35, 60 acres, 500 ft. vert. rise

Barlow Pass, 3 mi. E Govt. Camp on St. Hwy 35, 120 acres, 500 ft. vert. rise

Battle Creek Mtn., 9 mi. NE Dayville on US Hwy 26, 80 acres, 500 ft. vert. rise

Bennett Pass, 30 mi. S Hood River on St. Hwy 35, 137 acres, 500 ft. vert. rise

Brown Mtn., 22 mi. NE Ashland on US Hwy 99, 135 acres, 2,000 ft. vert. rise

Calamity, 25 mi. N Burns on US Hwy 395, 369 acres, 1,500 ft. vert. rise

Cherry Peak, 12 mi. SW Ft. Klamath on St. Hwy 62, 45 acres, 1,500 ft. vert. rise

Cloud Lake, 28 mi. NW Klamath Falls on US Hwy 97, 290 acres, 1,500 ft. vert. rise

Cooper Spur Glacier 35 mi. S Hood River on St. Hwy 35, 28 acres, 1,500 ft.vert.rise

Cornucopia Schneider, 10 mi. N Halfway on St. Hwy 86, 53 acres, 1,200 ft. vert. rise

Dixie Summit, 30 mi. NE John Day on US Hwy 26, 114 acres, 500 ft. vert. rise

East Multorpor, mi. SE Govt. Camp on US Hwy 26, 90 acres, 500 ft. vert. rise

Frog Lake Butte, 8 mi. SE Govt. Camp on US Hwy 26, 51 acres, 1,000 ft. vert. rise

Grayback Mtn., 10 mi. E Cave Jct. on St. Hwy 46, 60 acres, 1,500 ft. vert. rise

High Rock, 30 mi. E Estacada on St. Hwy 224, 226 acres, 500 ft. vert. rise

Ichabod, 23 mi. NE Ashland on US Hwy 99, 50 acres, 300 ft. vert. rise

Indian Basin, 5 mi. SE Upper Soda on US Hwy 20, 434 acres, 1,000 ft. vert. rise

OREGON (con.)

Lamberson Butte, 23 mi. S Hood River on St. Hwy 35, 240 acres, 1,000 ft. vert. rise
Larch Mtn., 12 mi. E Corbett on US Hwy 26, 27 acres, 300 ft. vert. rise
Lehman Springs, 16 mi. E Ukiah on US Hwy 395, 54 acres, 500 ft. vert. rise
Little ZigZag, 1 mi. N Govt. Camp of US Hwy 26, 28 acres, 500 ft. vert. rise
Lost Creek, 28 mi. NW Klamath Falls on US Hwy 97, 175 acres, 2,000 ft. vert. rise
Maiden Peak, 16 mi. NW Chemult on St. Hwy 58, 200 acres, 1,311 ft. vert. rise
Maklaks Mtn., 15 mi. NW Chemult on St. Hwy 58, 500 acres, 990 ft. vert. rise
Mary's Peak, 20 mi. SW Corvallis on St. Hwy 34, 60 acres, 500 ft. vert. rise
Mt. Bailey, 90 mi. E Roseburg on St. Hwy 230, 500 acres, 1,900 ft. vert. rise
Mt. Howard, 6 mi. S Joseph on St. Hwy 82, 100 acres, 3,835 ft. vert. rise
Mt. Jefferson, 35 mi. NW Madras on US Hwy 26, 1,000 acres, 1,000 ft. vert. rise
Mt. Thielsen, 25 mi. SW Chemult on St. Hwy 230, 100 acres, 1,000 ft. vert. rise
North End, 90 mi. E Roseburg on St. Hwy 230, 40 acres, 300 ft. vert. rise
Olallie, 20 mi. NE Detroit on St. Hwy 22, 22 acres, 1,000 ft. vert. rise
Olallie Butte, 25 mi. W Warm Spring on US Hwy 26
Rodley Butte, 90 mi. E Roseburg on St. Hwy 230, 1,700 acres, 1,000 ft. vert. rise
Sand Mtn., 10 mi. SE Upper Soda on US Hwy 20, 190 acres, 500 ft. vert. rise
Timothy, 30 mi. E Estacada on St. Hwy 224, 58 acres, 500 ft. vert. rise
Twin Mtn., 20 mi. SW North Powder on US Hwy 30, 700 acres, 2,650 ft. vert. rise
Wallowa Lake, 3 mi. S Joseph on St. Hwy 82, 82 acres, 2,727 ft. vert. rise
W. Eagle Meadows, 14 mi. NE Medic Springs,St. Hwy 203, 110 acres, 500 ft. vert. rise
West ZigZag, 1.5 mi. NE Rhododendron on US Hwy 26, 300 acres, 1,000 ft. vert. rise
Yainax Butte, 8 mi. S Beatty on St. Hwy 66, 40+ acres, 800 ft. vert. rise

UTAH

Albion Basin, 29 mi. SE Salt Lake on St. Hwy 210, 600 acres, 1,100 ft. vert. rise
Avintiquin, 20 mi. SW Duchesne on US Hwy 40, 2,000 acres, 1,000 ft. vert. rise
Big Sky, 12 mi. E Bountiful on St. Hwy 15, 700 acres, 1,500 ft. vert. rise
Bluebell, 11 mi. E Ephraim on St. Hwy 29, 40 acres, 800 ft. vert. rise
Boulger, 18 mi. E Fairview on St. Hwy 31, 160 acres, 1,000 ft. vert. rise
Circleville Mtn., 20 mi. W Junction on St. Hwy 153, 640 acres, 1,500 ft. vert. rise
Deseret Peak, 16 mi. NE Grantsville on US Hwy 80, 400 acres, 2,200 ft. vert. rise
Gad Valley, 29 mi. SE Salt Lake on St. Hwy 210, 1,300 acres, 3,000 ft. vert. rise
Hill Creek, 25 mi. NE Green River on US Hwys 6 & 50, 2,000 acres, 1,800 ft.vert.rise
Jefferson Park, 20 mi. NW Roosevelt on US Hwy 40, 2,000 acres, 2,000 ft. vert. rise
Navajo Lake, 23 mi. SE Cedar City on St. Hwy 14, 50 acres, 865 ft. vert. rise
Pigeon Water, 20 mi. NW Duchesne on US Hwy 40, 2,000 acres, 1,600 ft. vert. rise
Rigby, 24 mi. E Fairview on St. Hwy 31, 110 acres, 1,123 ft. vert. rise
Snake Creek, 4 mi. NW Midway on St. Hwy 224, 1,750 acres, 4,300 ft. vert. rise

WASHINGTON

Basin, 20 mi. SE North Bend on St. Hwys 108 & 90, 115 acres, 1,500 ft. vert. rise

Belcher Mtn., 20 mi. NE Republic on St. Hwy 4A, 400 acres, 1,250 ft. vert. rise

Black Buttes, 8 mi. S Glacier on St. Hwy 542, 2,400 acres, 2,000 ft. vert. rise

Buckhorn Lake, 25 mi. S Sequim on US Hwy 101, 20 acres, 2,000 ft. vert. rise

Canyon Creek, 6 mi. W Wenatchee on US Hwy 2, 480 acres, 1,500 ft. vert. rise

Copper Mtn., 30 mi. S Shelton on US Hwy 101, 8 acres, 1,200 ft. vert. rise

Denny Mtn., 20 mi. SE North Bend on St. Hwys 108 & 90, 207 acres, 2,200 ft.vert.rise

Horseshoe Mtn., 11 mi. NW Republic on St. Hwy 4A, 400 acres, 1,250 ft. vert. rise

Huckleberry Creek, 18 mi. SW Chewelah on US Hwy 395, 480 acres, 1,100 ft. vert. rise

Huckleberry Mtn., 15 mi. SW Chewelah on US Hwy 395, 640 acres, 1,300 ft. vert. rise

Indian Camp, 20 mi. SE North Bend, St. Hwys 108 & 90, 110 acres, 1,000 ft.vert.rise

Kendall Peak, 0.5 mi. N Hyak on St. Hwys 108 & 90, 1,000 acres, 2,600 ft. vert. rise

Liberty Bell, 25 mi. W Mazama on St. Hwy 20, 1,000 acres, 2,000 ft. vert. rise

Meadow Mtn., 16 mi. E Darrington on St. Hwy 530, 356 acres, 500 ft. vert. rise

Midway, 40 mi. S Packwood on St. Hwy 14, 300 acres, 625 ft. vert. rise

Moses Mtn., 30 mi. NW Coulee Dam on US Hwy 10A, 200 acres, 500 ft. vert. rise

Mt. Adams, 60 mi. SW Yakima on US Hwy 97, 1,000 acres, 1,000 ft. vert. rise

Mt. Townsend, 15 mi. S Sequim on US Hwy 101, 20 acres, 2,000 ft. vert. rise

Schrierers Meadows., 16 mi. S Glacier on St. Hwy 542, 361 acres, 800 ft. vert. rise

Sherman Pass, 18 mi. E Republic on St. Hwy 3P, 600 acres, 1,600 ft. vert. rise

Silver Peak, 20 mi. SE North Bend, St. Hwys 108 & 90, 369 acres, 1,200 ft.vert.rise

Silver Star, 25 mi. NE Vancouver on St. Hwy 503, 26 acres, 200 ft. vert. rise

Skyline Basin, 22 mi. S Dayton on US Hwy 410, 200 acres, 1,600 ft. vert. rise

Swamp Co., 30 mi. W Maxama on St. Hwy 20, 1,500 acres, 2,500 ft. vert. rise

WYOMING

Afton Mtn., 1 mi. E Afton on US Hwy 189, 20 acres, 1,500 ft. vert. rise

Alpine Park, 2 mi. S Alpine on US Hwy 189, 100 acres, 1,500 ft. vert. rise

Bald Mtn., 18 mi. SW Fort Washakie on US Hwy 287, >100 acres, 1,500 ft. vert. rise

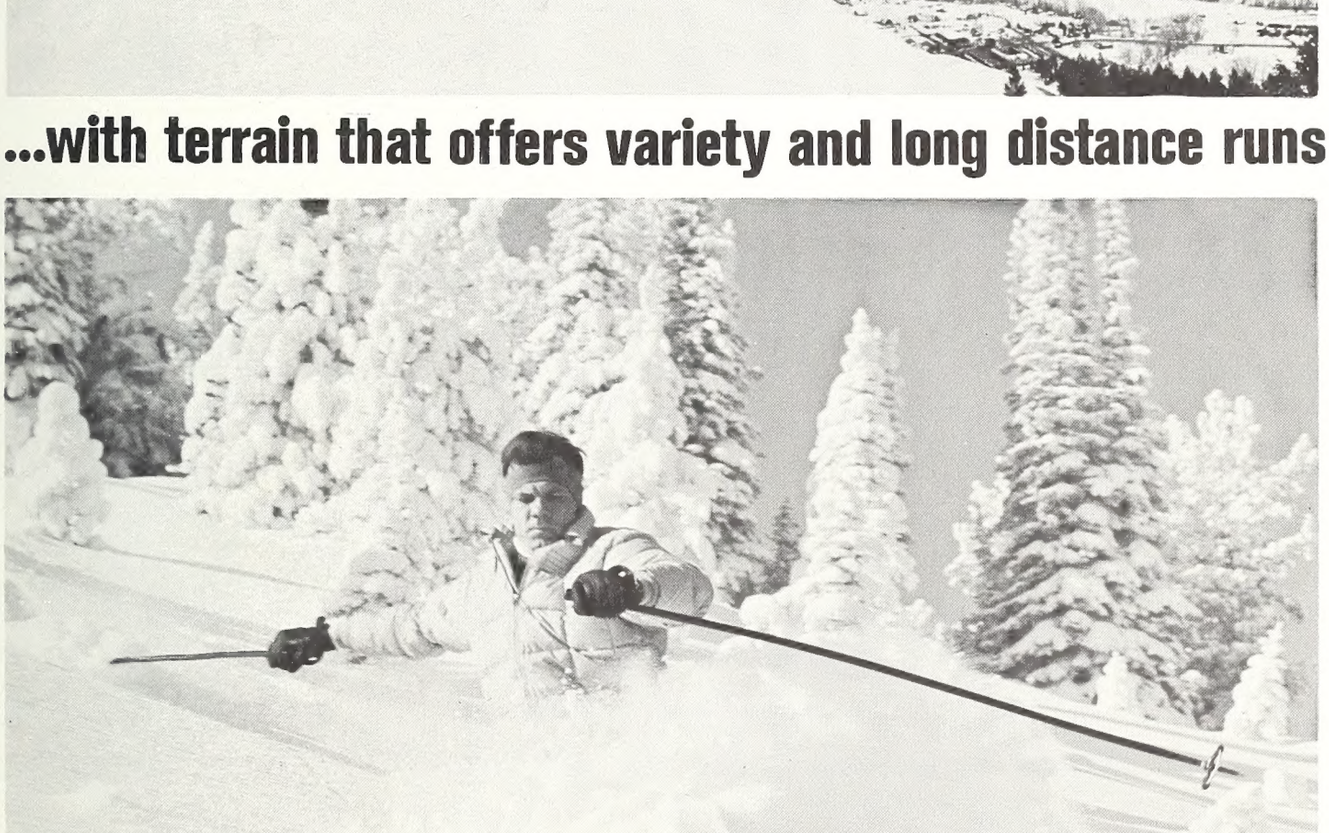
Elk Mtn., 50 mi. SE Rawlins on US Hwy 30, 2,000 acres, 3,000 ft. vert. rise

Fred's Mtn., 10 mi. E Driggs on St. Hwy 33, 500 acres

WESTERN SKIING COMPAR
TO THAT FOUND ANYWHERE IN T

...with terrain that offers variety and long distance runs

...and v

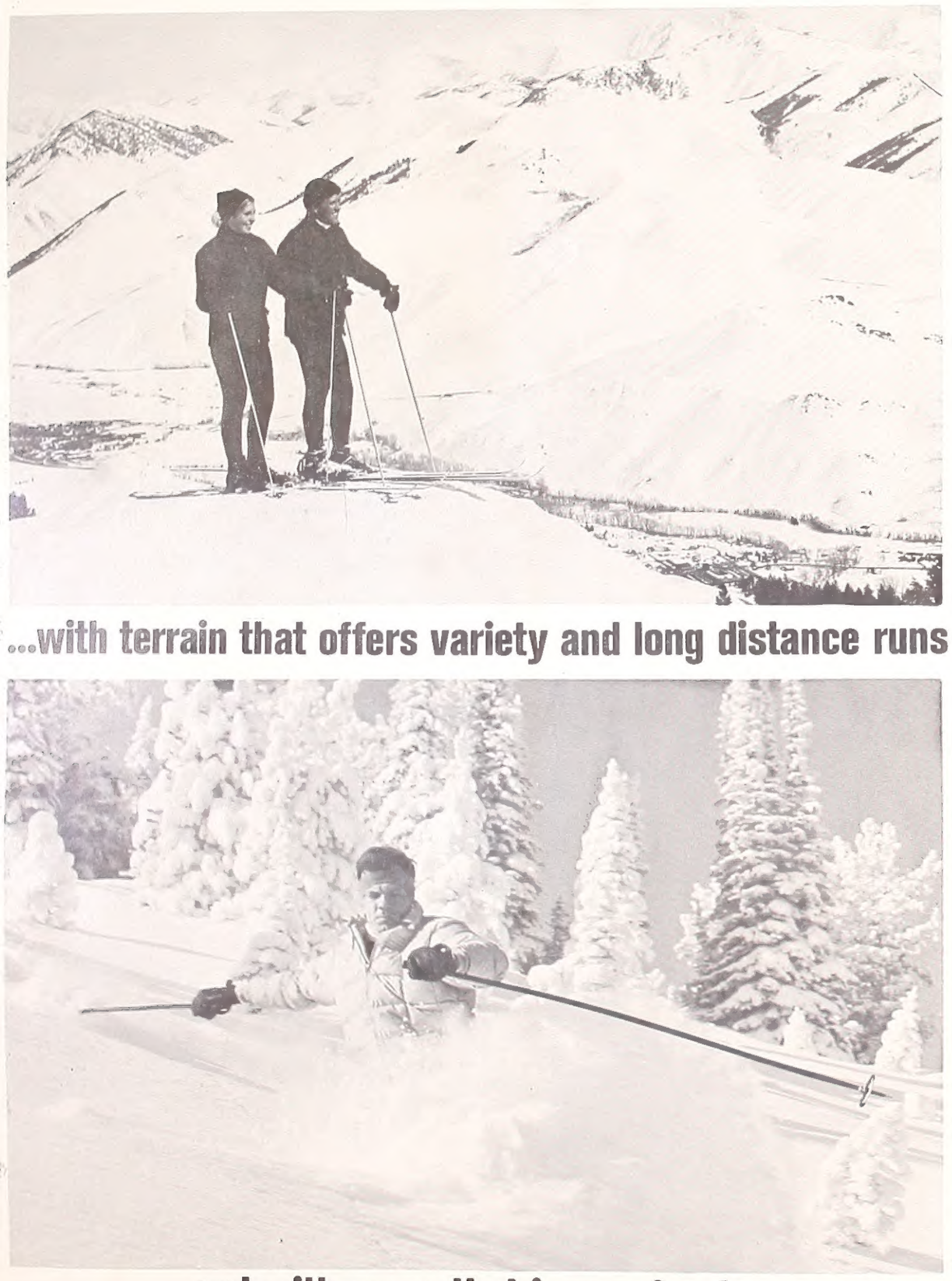


...and with snow that is powder dry

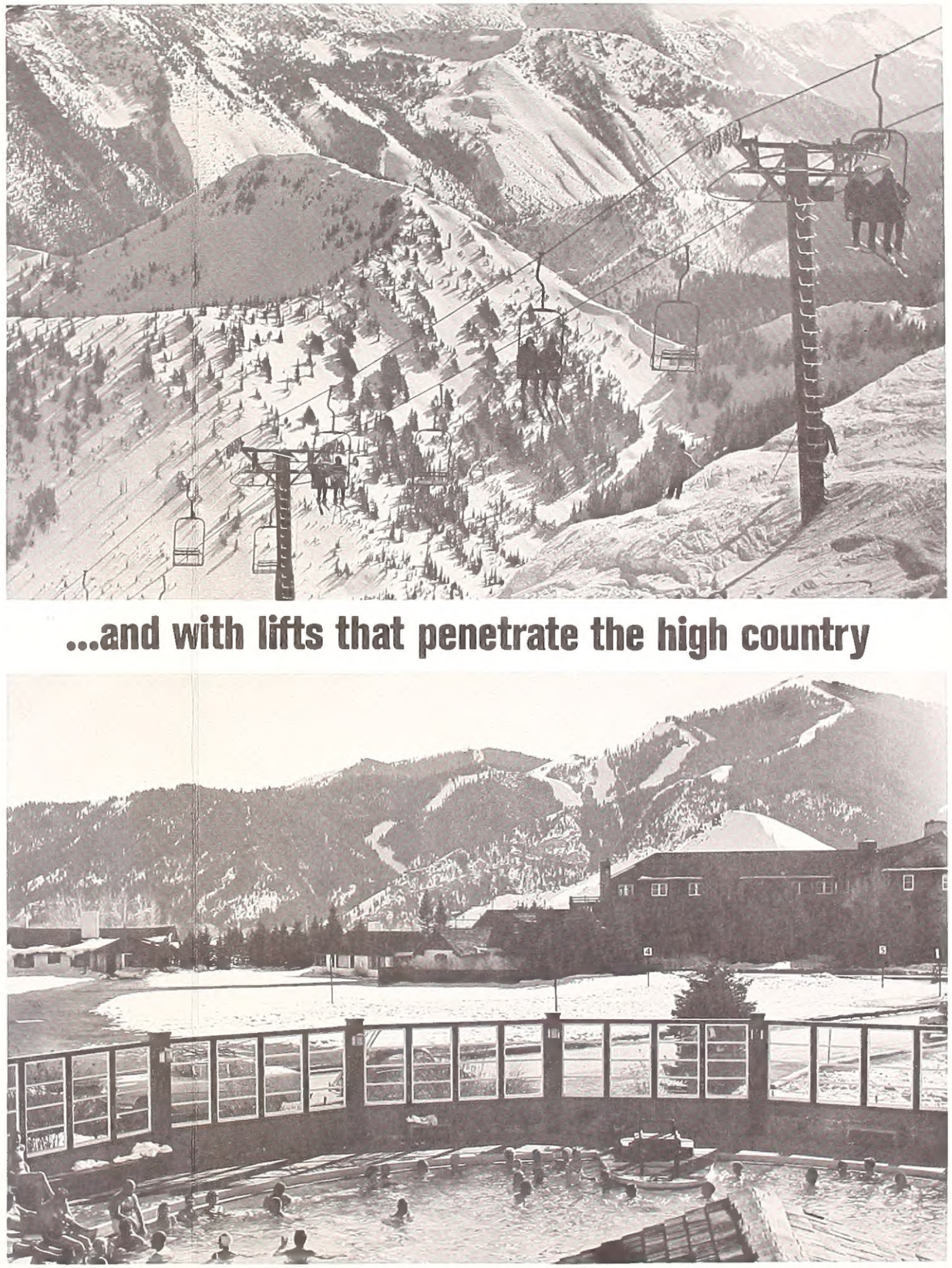
...more

NATIONAL AGRICULTURAL LIBRARY
1022506606

WESTERN SKIING COMPARABLE TO THAT FOUND ANYWHERE IN THE WORLD...



...with terrain that offers variety and long distance runs



...and with lifts that penetrate the high country

...and with snow that is powder dry

...more and more lodges are being built each year.

NATIONAL AGRICULTURAL LIBRARY
1022506606